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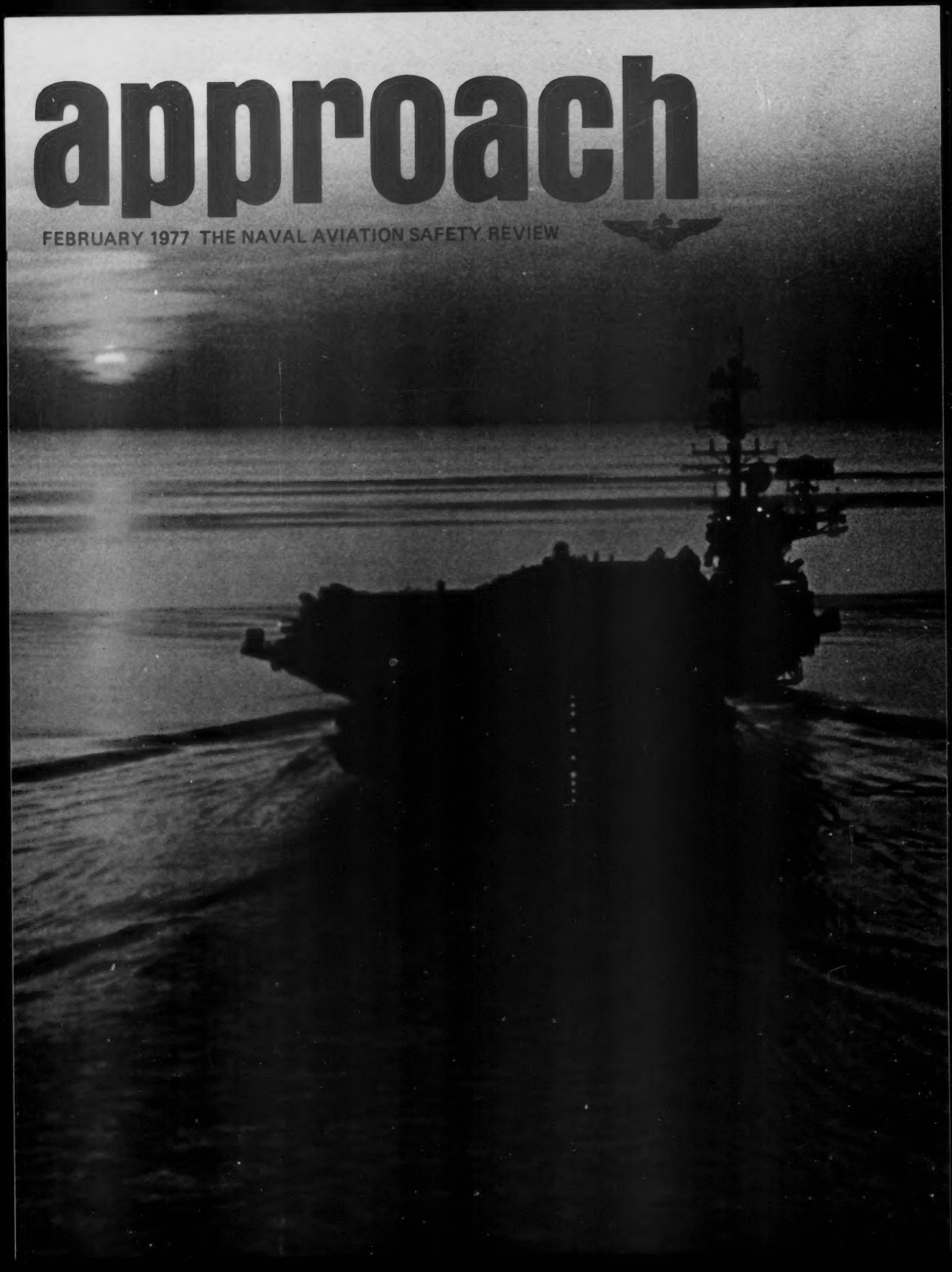
FEBRUARY 1977 THE NAVAL AVIATION SAFETY REVIEW



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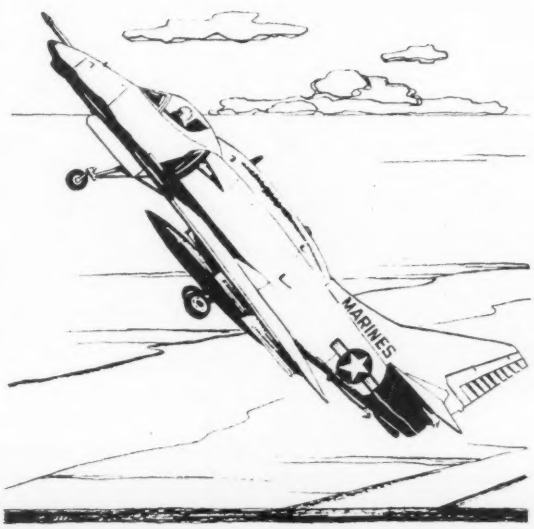
Disconnected Skyhawks

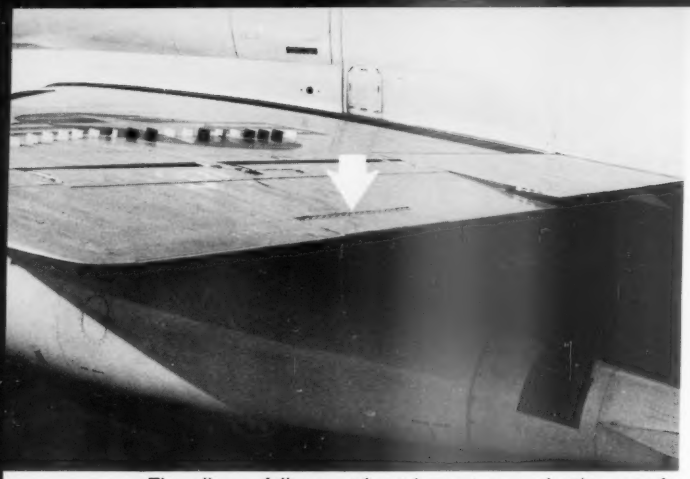
OVER the years, the A-4 *Skyhawk* has established itself as an extremely durable and reliable aircraft. In Vietnam, its toughness and survivability were demonstrated repeatedly as battle-damaged aircraft limped back to their ships despite often unbelievable damage.

One of the distinctive features of the *Skyhawk* that gives it its survivability is the manual flight control backup system. If the two hydraulic systems fail simultaneously, the pilot can pull a T-handle that disconnects the flight controls from the hydraulically powered system. He then controls the aircraft strictly by direct control cable connection to the flight controls. Admittedly, it takes more than a feathery light touch on the controls to fly the aircraft by this means, but the aircraft is flyable assuming the speed is kept below 300 KIAS.

As desirable as this backup flight control system is, it does not come without some negative aspects. The aircraft has had a history of mishaps associated with the disconnect function. Moreover, problems with the system have not been limited to any one area. There have been design deficiencies, maintenance malfunctions, and incidents of pilot error, all of which have led to mishaps. Over the years, a battle has been waged to overcome these problems, but disconnect related accidents still occur. Three mishaps have occurred within recent months that graphically illustrate how the problem still has not been solved. They also demonstrate the variety of problems that can occur with the disconnect feature. A review of them gives a good summary of A-4 hydraulic disconnect problems.



A section of A-4Ms took off for a high-low flight to a target range where they were scheduled for 30-degree loft bombing. At the completion of the high-level portion of the flight, the aircraft in the lead rolled 360 degrees to start his aircraft down and to get a better look at the terrain where he was going to start his low-level route. Coming out of the roll at approximately 300 KIAS, the nose of the aircraft began to rise. The pilot countered with forward stick, depressed the autopilot disconnect button, and noted the nose trim in the vicinity of zero and not coming up. There was not enough forward stick available to keep the nose from rising, so stick trim was used in an attempt to trim nosedown. At this point, the pilot stated that he began getting erratic movements in the control stick – the stick "wanted to do its own thing." The pilot used rudder to get the nose down and executed a modified barrel roll maneuver which put him 60-80 degrees nose low. At this point, he was being tossed around the cockpit, and as a last resort, the pilot elected to disconnect the flight controls. This was probably the worst thing he could have done. With the A-4 accelerating rapidly, the pilot could not recover without hydraulic boost, and



The aileron followup trim tab must move in the opposite direction to the aileron.

A visual inspection of the elevator power package is the only way to ensure it is completely connected.

Pilots should ensure that the direction of aileron movement corresponds with the direction they are trimming during aileron trim check.

he ejected.

A faulty AFCS system was responsible for the uncommanded inputs into the flight controls. Although depressing the autopilot disconnect button would kill the inputs, the button would have to be held down to keep the inputs from reappearing. The NATOPS procedure for an emergency of this sort is to deploy the RAT. The pilot did not pull the RAT because he was being tossed around the cockpit and was afraid he would jettison the canopy by mistake.

This accident was the result of improper knowledge of NATOPS procedures. The NATOPS manual clearly states not to actuate the flight control disconnect to rectify an AFCS malfunction. Furthermore, the manual fully defines symptoms of AFCS malfunction: " . . . if the flight controls operate in an erratic manner such as uncontrolled lateral or pitch oscillations . . . " Deploying the RAT is the only action that could have saved this aircraft.

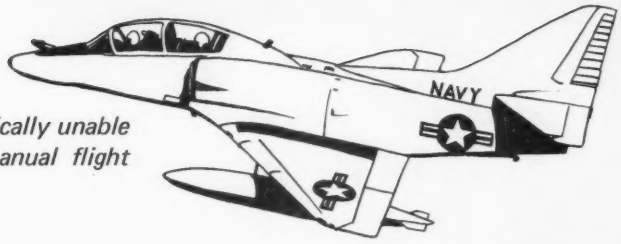
The pilot involved apparently wasn't alone in his vagueness about emergency procedures. The flight leader, flying wing at the time of the AFCS malfunction, gave his concurrence when the accident pilot broadcast his intentions to disconnect.

This accident was, therefore, an example of a lost aircraft due to incomplete knowledge of NATOPS procedures. The next accident demonstrates how pilot error and maintenance error can combine to set the stage for another computer statistic on A-4 hydraulic disconnects.

An experienced A-4 pilot launched on a functional checkflight that required a rate-of-roll check due to a change of the aileron trim cable. The A-4 has a followup trim tab on the port aileron which is adjusted by maintenance to position the ailerons aerodynamically in a trimmed position when the powered flight controls are disconnected. On rate-of-roll checks, the pilot will trim the aircraft hands off, disconnect the flight controls, and then time the rate of roll that follows. If the rate of roll exceeds certain limits, the aircraft is returned to maintenance for further adjustment of the aileron rigging.

When the checkpilot performed the rate-of-roll test, he found that the rate exceeded the maximum allowable degrees per second, but the roll was nevertheless easily controllable. As he started to trim out pressure, however, the rate of roll actually increased. Even using both hands on the stick failed to halt the roll, and after two complete rolls that put the aircraft 60 degrees nose low and accelerating, the pilot ejected.

Postaccident investigation revealed that the aileron trim cable was routed in the wrong direction, causing the aileron trim tab to run backwards. Thus the pilot was actually trimming in the same direction as the roll, aggravating the condition and leading to the loss of control.



When speed becomes excessive, a pilot is physically unable to provide the muscle power to move the manual flight controls, and loss of control is inevitable.

The pilot was a factor in the accident on several counts. First, he should have detected the incorrect movement of the aileron followup trim tab during poststart aileron checks. Considering the anticipated rate-of-roll test, the pilot should have paid particular attention to this check.

Secondly, the pilot reasonably could have been expected to diagnose the problem in flight when his trimming produced the opposite reaction to what was expected. Although this was certainly not an obvious error to catch in a difficult inflight situation, functional checkpilots are selected because of their experience and ability to counter unexpected situations that develop frequently on maintenance test flights. Interestingly, an identical situation happened to a Reserve A-4 pilot, but he recognized the problem in time to reverse his trim and prevent loss of control.

Finally, the pilot was cited by the investigative board for failing to reduce power to IDLE once the aircraft started to go out of control. Leaving the power up resulted in less time to diagnose the problem and perhaps effect recovery. Furthermore, when speed becomes excessive, a pilot is physically unable to provide the muscle power to move the manual flight controls, and loss of control is inevitable.

Maintenance, however, must take the major share of responsibility for this accident. Investigation centered around the training and qualification of those involved in the actual work and QA functions. They found both sadly lacking. The AMHAN assigned the task of changing the trim cable had worked with the system only twice before, once with direct supervision and the other time under progress checks. The AMS2 assigned to assist had no previous experience with the A-4 trim system and had been attached to the work center for a short time. The AMHAN received the majority of his limited knowledge of the system in OJT, since the NAMTRADET does not teach aileron rigging procedures in detail. Nor do they emphasize proper movement of trim tab and aileron with the corresponding direction of stick trim application.

QA personnel assigned to this job also indicated lack of knowledge and confusion about the aileron trim system. The routing of the aileron trim control cable is difficult to detect visually, and hydraulic power was not applied to check functional integrity of the system after work had been completed. Surprisingly, the MIMs do not require a sense check to test proper aileron trim tab movement. Overall, the board considered the MIMs incomplete and confusing in providing information about this critical area.

The board concluded that there was a shortage of knowledgeable supervisory personnel available to the command with the depletion of the Fleet A-4 squadrons. Thus, maintenance training and qualification must lie increasingly with ground school and maintenance publications.

The final mishap of this trilogy fortunately did not result in an accident – but the potential was certainly there. This incident graphically illustrates how human frailties set up mishaps as an almost unbelievable number of persons allowed the links of a potential accident chain to join together.

A newly designated functional checkpilot returned from his first checkflight after successfully completing a full test card including disconnect of the flight controls. Elated over his accomplishment, he informed maintenance verbally of the disconnected flight controls, but *did not fill out a downing MAF.* The maintenance controlman, not fully realizing the significance of what he was being told, took no action to ensure the flight controls were reconnected.

The next link in the chain of errors was the plane captain. Although fully qualified and experienced, the plane captain overlooked the disconnected flight controls on his turnaround inspection.

The snowballing sequence of events remained unchecked as a hurried young aviator arrived at the flight line. His aircraft was loaded with ordnance, and apparently he paid more attention to preflighting the weapons than he did the aircraft. He, too, overlooked the disconnected elevator and aileron power packages.

Only after the aircraft was started did the pilot notice something unusual. Feeling no resistance to the stick when he cycled the controls, the aviator summoned a

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troubleshooter. The hydraulicsman immediately sighted the aileron problem and reconnected the aileron hydraulic power package. The troubleshooter, rather than inspect the elevator package visually (this would have required a ladder), signaled the pilot to check elevator response. The pilot felt the controls worked OK, and the movement looked normal to the hydraulicsman. Mutual thumbs-up were exchanged, and the aircraft was sent on its way.

The satisfied pilot launched individually as the second plane in his section. Despite heavier aft forces on the control stick during rotation, the pilot did not recognize the partial disconnect until attempting to rendezvous on his lead. Fortunately, at this point he diagnosed the problem, informed his leader, and returned for an uneventful landing. But it could have ended so differently.

As mentioned earlier, these mishaps do not represent new problems but are instead simply the latest in the A-4's history of disconnect problems. If corrective action up to this point has failed, what are we to do in the future? This question is without easy answer.

The recommendation that comes immediately to mind following a disconnect-related accident is to remove the disconnect feature completely. This has been discussed before, and indeed, an argument can be built for it.

A Naval Safety Center computer study revealed that 44 incidents and 3 major accidents have resulted from disconnect-related situations (not counting the three recent mishaps discussed earlier). Balanced against this, there has been only one occurrence of a dual hydraulic failure that necessitated the use of the manual flight capability. Therefore, the case for retaining the disconnect capability doesn't seem too strong.

Despite these facts, the A-4 community has been very reluctant to do away with this capability – and for some very good reasons! As A-4s grow older, they have been experiencing increasing numbers of utility hydraulic failures. Concurrent with these failures, it is reasonable to assume that there will be an increase in the number of dual hydraulic failures. Dual failures will mean lost airplanes if the disconnect feature is removed. Moreover, although the Navy has no combat A-4s left, the Marine Corps' A-4Ms will be frontline combat aircraft for some time to come. To remove the disconnect feature would significantly reduce the *Skyhawk's* combat survivability.

Also, there has been a reluctance to remove the feature since the majority of incidents associated with this system have been the result of poor maintenance, inadequate

personnel training, pilot error, and other human causes. If the human problems could be overcome, the disconnect feature can be retained and the mishaps eliminated.

No decision has been made to remove the disconnect feature. The A-4 community must therefore eliminate human errors related to maintenance and operation of the system. To this end, the following actions have been recommended in reports of various disconnect-related mishaps:

- Reeducate pilots about partial disconnects, the conditions when a full disconnect is required, and the importance of monitoring aileron trim tab direction during the poststart trim check.
- Establish more intensive and complete training in the NAMTRADETS about this system. Stress should be placed on aileron trim rigging procedures and checks. Realize that virtually all training from now on is going to be "in-house." OJT and formal training must complement each other and be done in a thorough, progressive manner.
- Require a "sense check" following maintenance work on the aileron system. This will reveal if the cable is routed correctly and the trim working in the correct direction.
- Ensure the mandatory pilot/Quality Assurance brief prior to functional checkflights is accomplished thoroughly and completely.
- Require visual inspection of elevator power package prior to every flight.
- Clarify aileron rigging instructions in the A-4 MIMs.
- Stress to everyone the importance of performing maintenance and flight procedures by the book.

The A-4 is advertised as "the professional's preference." Let's apply this avowed professionalism to eliminating pilot and maintenance errors associated with the *Skyhawk's* flight control disconnect feature. ◄

NEAR-MIDAIR

By Art Adams
Air Traffic Control Facility
NAS North Island, CA

ONE night when there was no moon and only a few scattered clouds at 2500 feet, a couple of S-3s inbound to North Island and an H-3 inbound to Imperial Beach were involved in a near-midair.

The helicopter had been east and was receiving radar vectors from Approach Control to "Chopper," the IAF for Imperial Beach. The pilot was cleared for the Copter TACAN 264-A approach and to descend from 3500 feet to 1500 feet. While descending, the helo pilot sighted the S-3 (he thought it was only one, but the S-3s were a section) about 2½ miles at 1 o'clock. It became apparent that the S-3s and the helo were on a collision course. The helicopter pilot flashed his landing lights twice, but the S-3s kept boring in. The H-3 pilot pulled maximum collective to avoid collision and estimated the S-3s passed only 10 to 20 feet below him.

The S-3s were shooting TACAN Runway 29 approaches at North Island and requested clearance to depart the pattern and reenter for a break. The tower controller cleared them to Croaker (a fix, 160/7 DME) for reentry. The IAF for Imperial Beach is only 2½ miles southeast of Croaker. The S-3 leader stated they were in formation, saw the helo from 2 miles away, and weren't any closer than 1000 feet passing the helicopter.

The North Island tower controller erred in clearing the S-3s to Croaker, which is beyond the airport traffic area. Henceforth, any North Island traffic will be instructed to remain within 5 miles DME of the TACAN.

All pilots are cognizant of the see-and-be-seen requirement, and undoubtedly this is why there was a near-miss instead of a midair. However, at night all pilots have a tough job in judging distances. Furthermore, pilots of fast movers can strike fear in the hearts of slow movers just by being within 30 degrees of head-on, within 500 feet altitude.

The NAS North Island Operations Newsletter of April 1976 points out the difference in mental attitude and the different perspective of the helicopter pilot compared to that of the jet pilot. For example, a jet on a collision course can approach a helicopter from any relative bearing due to the speed differential; whereas an aircraft on a collision course with a jet will usually be on a relative bearing ahead of the jet. A jet pilot must be alert for slow helo and prop traffic in the vicinity of airports. He also has a moral responsibility to relieve any anxiety of the other pilot, as much as possible, by acknowledging any signal and by giving the other aircraft wide clearance.

How much is wide clearance? FAR 91.67 says "pass well clear" when overtaking. OPNAVINST 3710.7H says, "at least 500 feet vertically or 1 mile laterally." A miss may be as good as a mile, but to a helicopter or any slow mover, a mile is much better than just a miss. ◄

North Pacific SAR

By LTJG James S. Cooper

VP-19 Crew 6, call sign SG798 at Naval Station Adak, AK launched on a routine operational flight on 18 July 1976. Thirty minutes into the flight, with LCDR Scott Massey as patrol plane commander, a request was received from Adak SAR Coordinator to attempt contact with N2516M, a single-engine *Piper* aircraft enroute from Japan to Cold Bay, AK. The aircraft was overdue for a position report and considered short on fuel.

After failing to gain radio contact on their initial attempt, SG798 subsequently established VHF radio contact with 16M who requested assistance, stating that he was unsure of his position. He believed himself to be 100 nm southwest of Shemya AFB, heading northeast, with 2 hours of fuel remaining. SG798 diverted from the assigned operational mission and attempted to locate and aid the civilian pilot.

The Air Force tower at Shemya Island was contacted and informed of the situation. Shemya had neither radar nor radio contact with *Piper* 16M, and the civilian pilot had

been unsuccessful in attempting to utilize Shemya navaids.

The decision was made aboard SG798, based upon forecast winds and lack of contact by Shemya AFB, to concentrate the search for 16M south of the Aleutian chain. A radar/IFF search was commenced with little success due to the small radar profile of 16M. Following a period of lost communications, when SG798 descended to investigate a small radar contact, the civilian pilot disclosed that he had altered heading to 150 degrees, believing himself to be north of the Aleutian Islands. By this time, SG798 had ruled out the area north of the chain and turned 16M to a northerly heading. 16M had 30 minutes of fuel remaining, and time was running short.

The pilot aboard 16M indicated that his transponder was being interrogated. Aboard SG798, tension was mounting. It was decided that a bearing to the small aircraft could be determined by stopping the radar antenna rotation and manually slewing the pencil beam until a steady interrogation was received aboard 16M. This technique proved successful, and SG798 rendezvoused with 16M. At this time, the *Piper* was 80 miles south of the Aleutian chain and 250 miles east of Shemya (over 350 miles from the pilot's best estimate of his position).

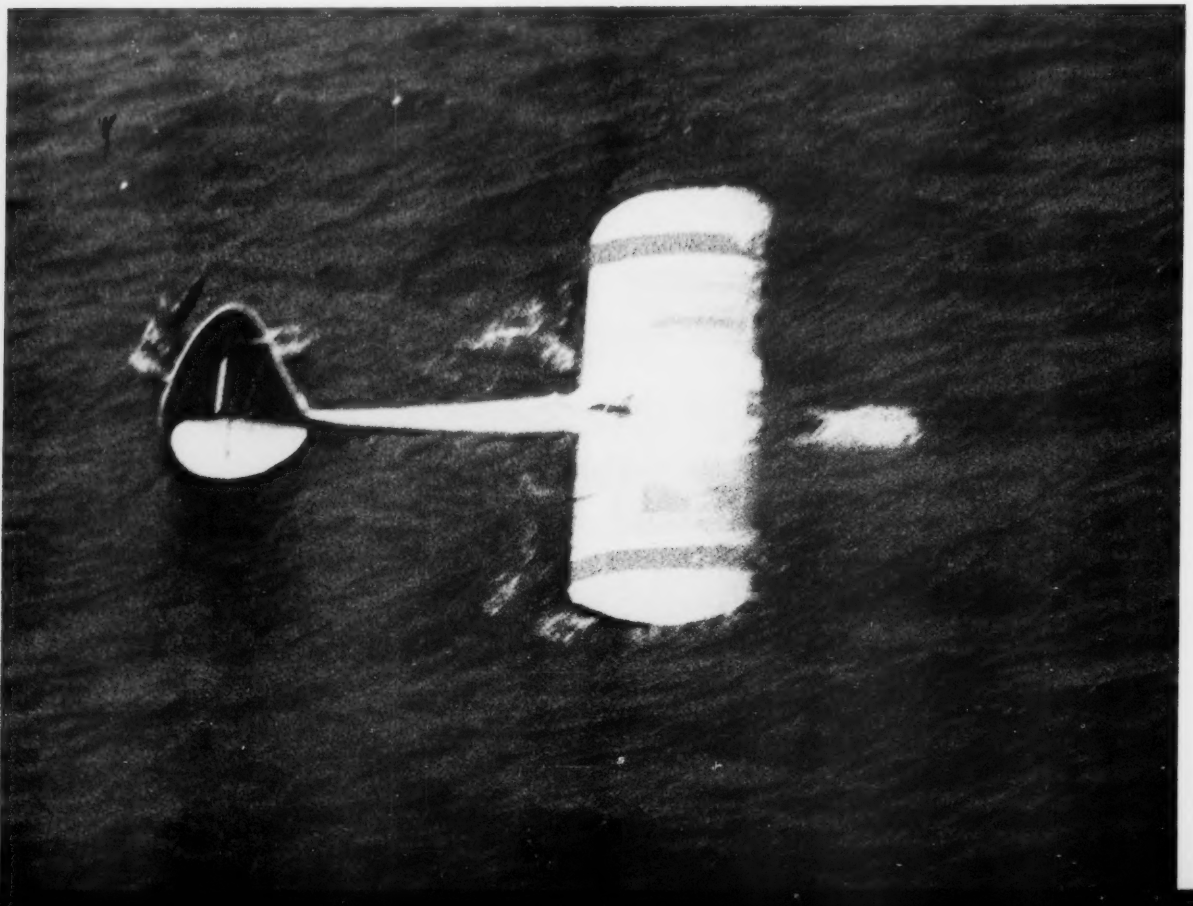
16M was now very close to fuel starvation. SG798 turned him toward a surface radar contact as LCDR Massey talked 16M through a cloud layer in a controlled descent. The civilian aircraft successfully ditched into calm seas, about 2½ miles from the radar contact, a Japanese fishing vessel.

Two liferafts, a smoke flare, and a long-life sonobuoy were dropped near the downed aircraft. As the pilot exited his aircraft and began deploying one of the liferafts in the 45-degree water, SG798 commenced attempts to turn the Japanese vessel toward the downed pilot. Repeated fly-bys, maneuvers, and the deployment of several smoke flares were unsuccessful in turning the vessel. A translucent sonobuoy container holding a graphic message depicting the downed pilot was then dropped close aboard the fishing boat. The vessel retrieved the message and soon thereafter altered heading to the survivor.

SG798 remained in the area while the Japanese craft picked up the survivor. They also provided the Coast Guard cutter RUSH with vectors to the area.

This flight was successful because Crew 6 was prepared to meet any mission requirement. Flexibility, coupled with enthusiasm, dedication, and professionalism are prime necessities in aviation. Crew 6 demonstrated these attributes and consequently saved an aviator from being lost in the frigid waters of the North Pacific.

Well done! ◄



AIR TRAFFIC CONTROL AND THE AVIATION FACILITY SHIP

By LT John T. Haizlip, USN
HSL-32 Det 1

THE problem of air traffic control at sea is broadening with the increasing number of deployed aviation facility ships and the prospect of hundreds of flight decks appearing throughout the Fleet with embarked units of one or two aircraft. For years, helicopters have been going to sea on service force, amphibious force, and as SAR detachments on small-boy ships without any apparent conflict. There were no noticeable problems because there were simply not enough of these assets deployed at any one time to provide appreciable competition for airspace. Additionally, their respective missions did not place them close enough to carriers during CV air operations to create any conflicts.

Airspace conflicts were bound to occur with the increasing number of LAMPS detachments deploying aboard frigates and destroyers. The problem is even greater when these escort ships are used in the carrier task force as an ASW screening unit. The following quote is from a recent TF-60 aviation safety analysis for FY-76:

> During FY-76 . . . 14 different LAMPS detachments on TF-60 ships provided valuable ASW and utility support to the force. During the past few years, the density of SIXTHFLT air ops in the Med has increased dramatically. Virtually every U.S. ship has the capability to operate helos. VP flights are more frequent, LAMPS helicopter operations are increasing exponentially, helo VERTREPS from service force ships are commonplace, and CVs routinely fly a large number of HS/ASW sorties every operating day. This increased level of helo/VP flight activity requires maximum coordination/control among all units to ensure positive air control exists to protect/separate VP/HS/LAMPS/VERTREP aircraft from TACAIR aircraft and maintain positive control around all air capable ships. Aircrews must comply with all altitude and area air control procedures and restrictions.

It is interesting to note that this same TF-60 safety analysis goes on to say that:

> . . . the performance of TF-60 LAMPS ships and detachments is worthy of special recognition. Although they are engaged in a relatively new concept of naval warfare, one which has the added hazards of developing new procedures and testing new equipments/facilities, their safety record is virtually flawless. Zero major and minor accident rates, two very minor ground accidents, only three crunches, and no personnel injuries represent a truly outstanding record. It is obvious that exceptional leadership, expertise, dedication, and sound planning

made this record possible.

Past air operations in the Mediterranean have produced a flurry of message traffic concerning CV aircraft overflights of aviation facility ships and helo/fixed-wing airspace conflicts. The problem has been identified by SIXTHFLT, NAVAIRLANT, NAVSAFECEN, and numerous other commands. It appears that the various levels of concern can be categorized into three different areas:

- Concurrent air operations when the aviation facility ship is close to the CV.
- CV overflights of aviation facility ships.
- Air operations by aviation facility ships within a carrier control zone.

Simultaneous air operations between aviation facility ships and CVs can be effectively and safely accomplished. However, as one message from COMNAVAIRLANT points out, the "...recent incidents of aircraft flying low without prior clearance near LAMPS ships has highlighted the continuing problem of ensuring maximum safety during concurrent operations of fixed-wing and helicopters." The message continues by reviewing the basic, pertinent directives and provides the following summation:

FAR 91.79. Over open water, aircraft may not operate closer than 500 feet to any person, vessel, vehicle, or structure.

CINCLANTFLTINST C3821.3B. Aircraft shall approach surface combatants no closer than 500 feet.

OPNAVINST 3710.7H. Except when necessary for takeoff and landing, or when the mission of the flight requires otherwise, flights in fixed-wing aircraft shall not be conducted below an altitude of 500 feet above the terrain or surface of the water.

CV NATOPS Manual. A carrier control zone exists within a 5-mile horizontal radius of a CV, extending upward from

Concurrent air operations between CVs and aviation facility ships can occur without overflights or any other problems if proper air traffic control procedures are adhered to.

the surface to and including 2500 feet, and clearance must be obtained from the CV to operate an aircraft therein.

NWP-42(B) Shipboard Helicopter Operating Procedures. A control zone exists with a 5-mile horizontal radius of an LPH, extending upward from the surface to and including 2000 feet, and clearance must be obtained from the LPH to operate an aircraft therein.

The conclusion states that at the present time, aviation facility ships with embarked air groups do not have a control zone, but its establishment is being considered.

> "In view of the foregoing, prudence and judgment dictate that all USN helo-capable ships be treated as though flight operations were in progress. Operational commanders may impose more stringent limitations as the mission dictates. Accordingly, every pilot must be familiar with standing operation orders and the rules of engagement."

Concurrent air operations between CVs and aviation facility ships can occur without overflights or any other problems if proper air traffic control procedures are adhered to. There are several standing operation orders utilized on a daily basis which impose stringent altitude limitations and restrictions for all aircraft to follow. Common guidelines delineate minimum altitudes for rotary- and fixed-wing aircraft when flying near any U.S. or friendly ship. That altitude cannot be violated without clearance from the ship involved.

Near-misses have been reported by several aviation facility ships. For example, one ship reported being overflown twice by allied fighter aircraft at altitudes between 100 and 200 feet while conducting LAMPS ops. Another time, an early warning aircraft flew up the wake at 500 feet, circled the ship once, and departed. Then, later, two sections of A-7s, in formation, flew over at 500 feet.

Another ship's helicopter was conducting a night bounce period and was "inspected" by an S-3. The S-3 was being vectored to a surface contact but did not descend below 800 feet.

Finally, a third aviation facility ship reported being "attacked" by several U.S. and foreign aircraft at altitudes from 100 to 200 feet. The ship's concern was such that it temporarily suspended LAMPS flights.

The original ASAC (Antisubmarine Air Control) Handbook contained altitude limitations used by all Naval air controllers during an ASW situation. This publication was recently superseded, along with the various HS, HSL, VS, and VP tacaids, by the *Air Anti-Submarine Warfare Tactical Airborne Information Document* (NAVAIR

01-1TAC-1T). This, commonly referred to as the TACAID, still outlines specific altitudes for separation of aircraft in an ASW environment. The two levels of separation occur during the following situations:

- Aircraft in search and transit.
- Multitype aircraft at the scene of action.

Since these altitude limitations exist during an ASW situation, could they be expanded to include all situations?

It might be interesting to note at this point that the *Allied Maritime Tactical Instructions and Procedures Manual,* Volume I, also contains explicit instructions on altitude limitations and aircraft separation. ATP 1(B), Volume I, is often called the bible of the surface Navy and is analogous to the NATOPS Manual, OPNAVINST 3710.7H. Paragraph 1360 of ATP 1(B), Volume I, addresses safety procedures for maritime air operations and imposes minimum and maximum altitudes for fixed-wing aircraft and helicopters operating together in coordinated operations. Although ATP 1(B), Volume I, is not often consulted by naval aviators, it should be viewed as another credible source providing guidelines for the still unresolved situations of CV overflights and helo/fixed-wing airspace conflicts.

The last area of concern pertains to air operations conducted by aviation facility ships while within a carrier control zone. In particular, this concerns LAMPS ships carrying out scheduled flight operations from their assigned screening stations. These megabuck ASW platforms carry the most advanced and sophisticated sonar systems in the world today. If the frigate is augmented by a LAMPS air detachment, and in some cases, an extensive towed array, it becomes a formidable ASW platform.

The proper utilization of the ASW frigate normally calls for its use in a sector screen away from the CV. Effective placement of the LAMPS ship can simultaneously preclude airspace conflicts and allow for maximum tactical flexibility in performing the ASW mission of protecting the high value unit. When the LAMPS ship is removed from its ASW sector screen and assigned to a station close to the CV, such as plane guard or rescue destroyer, its primary ASW mission is substantially diminished. If the quick reaction capability to launch its aircraft on sonar contacts is curtailed, the LAMPS ship loses some of its ability to prosecute and identify at extended ranges.

LAMPS aircraft, like any helicopter, are required to maintain a day launch capability for the ultimate mission of SAR. Assignment to plane guard or rescue destroyer station should not necessarily preclude aviation facility ships from launching their aircraft. Concurrent air operations can still be safely and effectively accomplished without airspace conflicts. If the LAMPS ship is assigned at its maximum tactical distance from the CV, it will permit any necessary maneuvering required to launch and recover the helicopter. Additionally, it will avoid fouling the VFR departure corridor for Case I and Case II departures.

Increasing the carrier control zone would be another solution to reducing airspace conflicts; however, it would be a tremendous burden on the CV air officer who is cognizant during VFR conditions. With LAMPS ships issuing daily air plans, a more realistic solution would provide for an established prelaunch notification and acknowledgement procedure between the aviation facility ship and the CV prior to launching a helicopter. This procedure is already in effect in one LAMPS-CV task force and is working quite well. The basic criteria for the LAMPS frigate requires clearance prior to launching according to the following guidelines:

- *Day operations* – When within 5 nm, request clearance from the tower on LAND/LAUNCH.
- *Night operations* – When within 10 nm, request clearance from Departure Control.

After launching, the LAMPS can depart the zone on its own mission or remain under positive control by the CV. The latter procedure allows the LAMPS to conduct ASW missions with the CV in a multisensor environment with HS and VS assets. When the LAMPS returns for final recovery from outside the zone, it is simply a procedural matter to contact Marshal Control for the appropriate squawk code, altitude, and final vectors to the LAMPS ship.

The only exception comes in a quick-react type situation, i.e., when the LAMPS frigate gains a sonar contact or receives a reported man overboard. Depending upon the state of readiness and alert status, the LAMPS can become airborne in minimal time proceeding to its datum or rescue area. CV notification and statement of intentions can be accomplished by the ship's CIC during the period of the launch, or once airborne, by the LAMPS helo and at minimal altitudes to preclude any airspace conflicts.

Since LAMPS is engaged in a relatively new concept of naval warfare, one which has the added hazards of developing new procedures and testing new equipments and facilities, the key to its success is communication – and lots of it among all areas concerned! Embarked air groups will be deploying on aviation facility ships in increasing numbers in the years to come. The critical airspace interface with the CV will have to become a routine situation in order for each community to achieve success in their respective mission areas. Today, VTOL aircraft are primarily rotary wing; tomorrow it will be a variable-thrust fixed-wing aircraft. ◄

Safely 1000 Times

USS TRUETT (FF 1095) was operating in the rough waters of the English Channel as a unit of the Standing Naval Force, Atlantic, in a large scale NATO exercise one night. About 0230 the ship's SH-2F began an approach. The silence in the tower was broken by the familiar laconic voice exchange between control and pilot.

" . . . this is 38 on final, gear down and locked, right side."

" . . . Roger. Pitch one, roll four, winds port two-zero at seventeen. Cleared to land."

After the transmission, the controller threw a switch, and a green light winked on to confirm that TRUETT was ready for the pilot to land the helicopter. Moments later, 38 flew down the glide slope, came to a short hover over the deck, and eased onto the deck in the center of the landing circle.

After the rotors had stopped, LT Richard J. Jaeger III, air officer of TRUETT, stepped out, having completed his 1000th destroyer/frigate landing. Coincidentally, his milestone landing was in BUNO 149024, the same airframe in which he had made his first landing aboard USS BIDDLE off the coast of Vietnam 7 years earlier. LT Jaeger and his helicopter have seen a variety of service since 1969.

LSO

NO one can doubt that safety in carrier aviation has come a long way in the last few decades. Nevertheless, recent trends in the carrier landing accident rate show us that hazards still exist, and there is certainly room for improvement. Of all the major factors in every carrier landing – the ship, the pilot, the aircraft, and the LSO – which have shown the most improvement, and, more significantly, which have the greatest potential for improvement?

Possibly the most impressive gains have been made in the area of shipboard equipment. The angled deck, the *Fresnel* lens and improved stabilization systems, the LSO Head-Up Display, white deck lighting, droplights, larger decks, ACLS, and ILS have all markedly contributed in making carrier landings safer. Quite obviously it has taken much money to make these improvements to our carriers, but it has been a very worthwhile investment when you consider the lives and aircraft that have been saved.

Our aircraft have also benefited from the same kind of attention. Jet aircraft have never been better suited to carrier aviation than they are today. Better fuel specifications, slower approach speeds, ACLS, APCS (approach power compensator system), and DLC (direct lift control) all aid the pilot in getting aboard safely and consistently.

What about the LSO, though? Yes, all these changes mentioned have made his *job* easier, but what of the man himself – his training, knowledge, and ability? He is essentially the same today as he was when he first put down his paddles and picked up a headset and pickle. The LSO has remained largely a constant in the carrier landing accident equation. For the most part, he has been bypassed in the tremendous efforts exerted to prevent carrier landing accidents. Consider the following points:

Training. The most basic of the LSO's tasks – monitoring and evaluating a carrier landing approach – is a very subjective thing, difficult to formalize or quantify. Possibly because of this, his training and qualification have remained one of the last bastions of informality and nonstandardization in Naval Aviation. It has worked fairly well in the past and was part of what attracted many of us to the job. But can we still afford that system today?

Our training has been almost entirely OJT. Under this system, only continuing exposure to carrier landings under all conditions can maintain the LSO's expertise. But we're in a new era now – shorter sea tours, shorter cruises, and decreasing numbers of carrier landings to control or observe. We're losing the "J" in OJT. Formal training could help to compensate for this, but no standardized requirements presently exist. Yes, we have an LSO Phase I school that teaches the basics of the job to the newest LSO trainees. But our training and qualification are solely under the control of the air wing LSO, while theories of waving and established LSO training programs vary drastically from one air wing to another. Once qualified, there are no currency requirements or formal, periodic testing procedures to check our qualification or expertise. And as today's less experienced squadron LSOs go to the RAGs, and then on to air wing LSO billets, we may someday see the marginally qualified training the unqualified.

Perhaps we can compensate for what we have lost in OJT by more formal training. Perhaps schools can be established for each level of LSO designation. A school for prospective RAG LSOs and another for prospective air wing LSOs could be set up along the lines of the Phase I school that exists today.

Simulators could help make up for the decreasing number of passes that we see today. A good LSO trainer is certainly within today's simulator state of the art. In fact, one already exists, but not for general use by operational LSOs. LSO simulators located where LSOs can use them often would be a big step in upgrading LSO training and in

the forgotten man

By LT G. J. Saunders
VF-103 LSO

helping to maintain proficiency.

The LSO's ultimate task will always be subjective, and his biggest asset, sound judgment. But more formal, standardized training would help him gain the knowledge upon which to base that judgment.

Selection Process. After all these years, some LSOs are still placed in the job, not because they are the best candidates or because they requested the job, but simply because the billet "had" to be filled, and they were available at the time. The unique nature of the LSO's job requires that he be a willing volunteer for all that the job entails: the long nights at the bounce field, usually just prior to a deployment when it hurts the most to be away from home; critiquing and instructing pilots from ensigns to CAGs; acceptance of the responsibility for the safe recovery of aircraft flown by his friends and shipmates; and the realization that he'll be one of the first ones under the gun in the event a carrier landing accident occurs. It isn't a job for someone who may not be willing to accept these things and who isn't strongly motivated to become an LSO.

Perhaps our priorities should be shifted a little. It probably would be a better contribution to carrier landing safety to have a smaller number of highly motivated LSOs than to have the right "numbers" by occasional random selection.

Career Pattern. The days of the "full-time" LSOs are behind us; their specialization in that one limited field naturally reduced their promotion opportunities. The LSO needs work in other fields to become a well-rounded officer. But the LSO is still in a tough position. In his other jobs, he competes with officers who may be able to devote much more time and effort to these endeavors. If he is to compete successfully with those officers, the time he devotes to becoming a good LSO must surely suffer in relation to those "full-time" LSOs of the past, and yet the need for good LSOs is as great today as it has ever been.

Perhaps the only answer here is command attention. When evaluating officers who are LSOs, reporting seniors should give serious consideration to the time and effort that officer devotes to his very important job in carrier aviation. The LSO should know that he won't necessarily suffer as a result of spending time to better himself as an LSO.

Only a few problem areas have been mentioned, and possible solutions barely touched. Certainly, a designated group of highly experienced LSOs, with support from higher authority, could find many ways to upgrade the quality of our LSOs and their training. And that is what is really needed – the same attention devoted to improving our LSOs as has been devoted to improving our ships and aircraft. The benefits to carrier landing safety would more than justify the effort and expense involved. ◄

Survival training for

By LT C. H. Pelt
VA-155

EACH day hundreds of men are exposed to the hazards of jet blast aboard a carrier and face the possibility of being blown overboard. Alarmingly, all too often these men are not well trained on how to use their survival equipment. Most have never been in the water with this equipment and do not know what to expect or how to make the equipment work for them. Many do not know how to inspect their equipment properly. A review of personnel records shows that many have avoided swim training by signing the statement that they are "swimmers" already. However, when placed in pool training, some of these "swimmers" clearly indicated that these statements were made from fear rather than proficiency. Additionally, few of the men have been taught the techniques of drownproofing, which are taught to all pilots.

The realization that our men are not ready for the hazards that will confront them should they be involved in a survival situation prompted a new training syllabus within VA-155. Each man required to work on the flight deck is given the opportunity to jump in a pool with a survival vest and discover for himself how the equipment works before an emergency arises.

In addition, he is shown the techniques of drownproofing. Under supervision he begins learning this lifesaving procedure that leads to increased confidence in the water and gives the weak swimmer better swimming skills. Not all are able to master drownproofing techniques without many hours of practice, but the payoff is well worth the effort.

flight deck personnel

For those who sink if not moving in the water, additional training is suggested to acquaint them with ways to make flotation devices from regulation clothing.

It is not necessary to schedule a training tank to accomplish this training. Most base pools will allow approximately 10 men per session to hold training during regular hours. The vests used must be clean so they don't contaminate the pool water. We used the flight deck integrity watch gear for all training sessions. Usually there is a competent swim instructor within every command who can assist the safety officer if necessary.

A thorough brief on the monthly and daily inspection of the survival gear is given first. Most often neglected is the use of breakaway wire on the CO_2 bottle assembly which will show at a glance if the bottles have been expended.

Each man is shown how to give maximum protection to his body during water entry by folding his arms, crossing his legs, and a demonstration jump is accomplished. High towers are not necessary but will add to the realism if available.

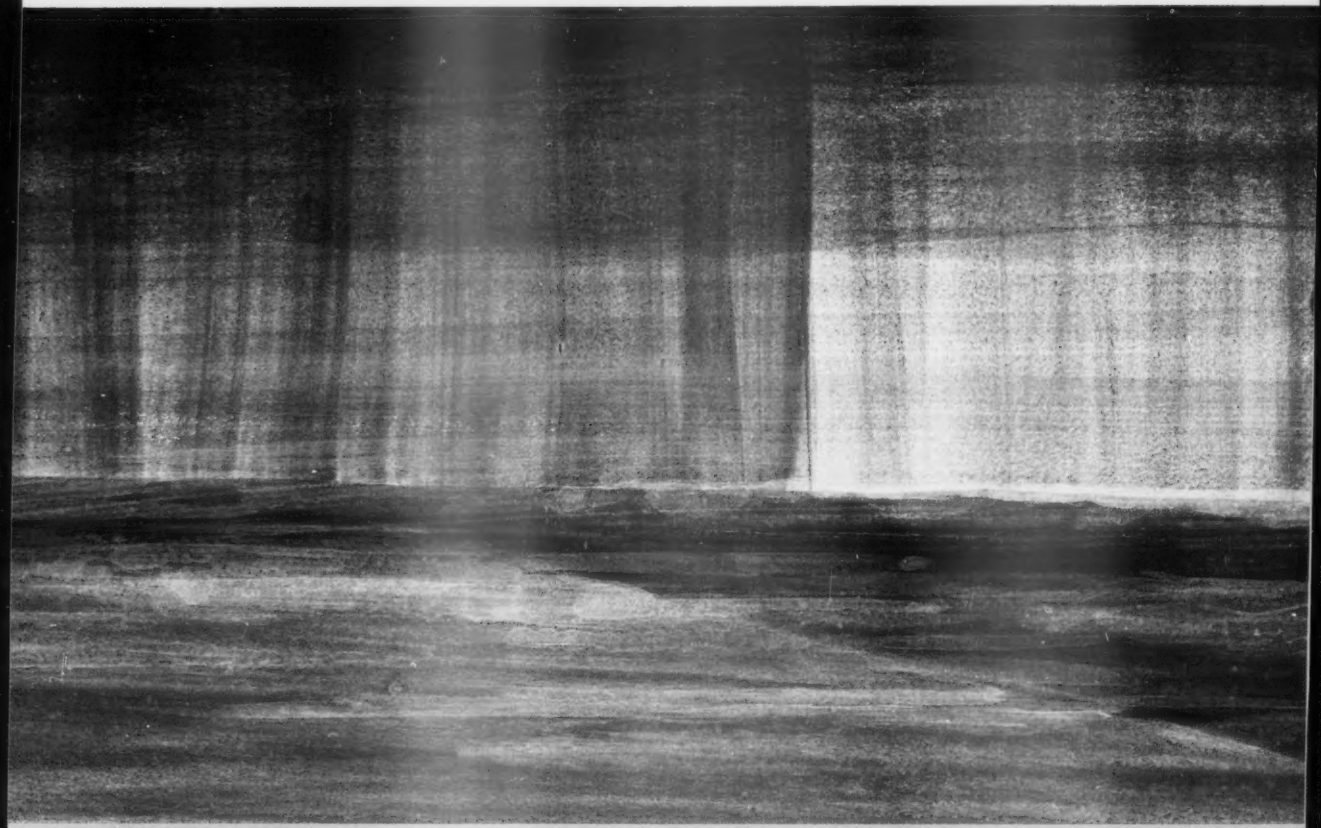
Lifevest inflation procedures are also taught due to shortages in CO_2 bottles for training purposes. The oral inflation method was used for our training. Supervise each man closely during the inflation phase, since some may panic. This has happened once and serves to point out the value of this training.

Next, a brief on the techniques of drownproofing can be covered and a demonstration given by an experienced instructor. Weak swimmers are coached carefully until they become relaxed. Only after the techniques are clear should swimmers make their first try in deep water. It is important to emphasize the requirement to relax in order to master the procedures. The "sinkers" are identified at this point and given extra training in the use of clothing for flotation assistance.

The response to the training has been favorable. Most men are very pleased to get this experience, and the swim is a pleasant break from the daily routine. The instruction should be aimed at familiarizing the men with their equipment and survival techniques and is not designed to embarrass weak swimmers. Be sure the goals are clear, and the response will pay off in your safety program. Get your squadron in the "swim" of things.

Drownproofing has been an effective technique when flotation is a primary concern. However, studies have shown that drownproofing is not a good technique in cold water because of the great heat loss that occurs off the top of the head when it gets wet. The greatest threat to survival in cold water is hypothermia, the lowering of the body core temperature to a point where the vital organs no longer function. For more information about this (cold water survival might be included in the squadron training course), refer to the NAVY LIFELINE article "Man in Cold Water," Jan/Feb '76 issue. – Ed.

". . . and 58198, your destination (overseas air base) weather is clear, wind calm, visibility 5 miles, altimeter



It ought to be easy

THE PPC of the P-3, after hearing the weather report, remained in the right seat to let his 3P shoot the night approach and landing. They were returning after a long operational flight.

Shortly after the weather report, Center handed them off to Homeplate GCA. When in contact with GCA, they were given the same weather report, except visibility was reported as 7 miles, and GCA advised they were cleared for a straight-in PAR to Runway 28.

During vectors to final, both pilots saw the lights of a nearby city and another airport. However, Homeplate wasn't visible. They descended to 2000 feet, and the landing checklist was completed while more than 10 miles out. GCA shortly stepped them down to 1500 feet and then advised them they were intercepting the glidepath.

The runway and approach lights were not visible as they descended on final. They were descending at 700 fpm and kept receiving "on glidepath" calls from the controller. Passing through 800 feet, the PPC announced they were IFR. The approach was continued, and upon reaching 300 feet, GCA advised they were at decision height. The PPC saw a glow of lights ahead but could not identify the runway environment. He checked his altimeter, saw it passing through 200 feet, added power, and called for a waveoff.

The 3P raised the nose as the *Orion* contacted the ground and bounced back into the air. The port main landing gear was the only gear to touch down. They had hit 300 feet short of the threshold and 800 feet short of the GCA touchdown point.

During the climbout, the PPC requested a change to land on Runway 10 because it appeared to have better visibility. The controller declined and recommended another GCA to Runway 28. The second approach was waved off at decision height when again the runway was not in sight.

0.07."

This time the PPC's request for a PAR to Runway 10 was approved. A routine GCA and landing followed.

After reaching the chocks, an investigation of the gear was made. Several cuts in the port mainmounts were discovered, and the tires subsequently were changed. A hard landing inspection was performed, even though a hard landing had not occurred. No other damage was found. However, it was discovered that two runway lights had been destroyed.

There is no doubt that the pilot was at fault for busting the first approach. If one is allowed to guess, there probably wasn't any cockpit briefing prior to the first approach. After all, no weather problem was suspected.

The crew received no help from the GCA controller concerning the actual weather conditions. They landed at 0230, but at 0100 Homeplate had put out a special weather observation: 900 scattered, 3 nm in ground fog, wind 300 at 4, altimeter 30.06, temp 62/dewpoint 66. Again at 0158, another special: 900 scattered, ½ nm in fog and haze, wind 270 at 1, altimeter 30.05, temp 60/dewpoint 60. *Neither of these reports was passed to the Orion crew!*

The squadron launched an investigation of the entire affair, and among other things, requested the GCA tapes. Several days later they were advised the tapes were blank. A Navy air controlman, realizing that fog had formed while the aircraft was on the initial approach, switched on the RAILS (strobe) and approach lights and informed the senior controller. The senior controller turned them off and left them off during the second approach. When asked why the approach lights weren't routinely used at night, the senior replied that it increased the frequency of bulb failures. There is also a problem because of the inability of the controller to change the intensity of the lights, and a concurrent problem which caused the runway lights to dim when the approach lights were turned on.

There's a message here for all pilots. You cannot relax for one moment *at any time* during an approach. You accept information for what it's worth – not as gospel. You plan the approach, you communicate with each other, and you stay mentally alert for any eventuality. ◄

The ultimate penalty

JUDGMENT: perhaps the key to longevity in naval aviation. Judgment is obviously critical in the inflight regime where multiple decisions must be made in a timely, correct, and often irreversible fashion. Just as important, and perhaps too often overlooked, is the importance of good judgment on the ground. Knowing when *not* to fly, planning flights carefully, and realizing personal limitations are examples of good judgment displayed on the ground. The pilot involved in the following accident displayed poor judgment both in the air and on the ground. And for it, he paid the ultimate price – death.

It had been a long weekend for the pilot. He was the duty pilot for the weekend and had flown a US-2 on a logistics flight to a west coast air station the day before the accident. Since the aircraft was down on arrival, he RONed at his destination and returned to Homebase the following day after repairs had been made. Later that afternoon, he was asked to fly to another air station to pick up a

squadron member. Since the US-2 was not available for this flight, the pilot was assigned an F-4J.

The pilot was dual qualified in the US-2 and the F-4J, but he had very limited experience in *Phantoms.* Of his total 623 hours' jet time, only 52 were in the F-4, including 35 in the last 3 months. Perhaps even more significant, he had flown only 7 night hours in the past 3 months.

The short flight to the nearby NAS was uneventful. The pilot arrived late in the afternoon and proceeded to a friend's house. There he consumed two scotch-and-waters prior to returning to the airfield at 2000 for the flight back.

The passenger to be picked up was a squadron RIO who was in the process of changing duty stations. He met the pilot at the airport, but since he was expecting to be transported in the US-2, he had none of his flight equipment. The pilot had brought along a torso harness, helmet, and oxygen mask but no other flight gear. Thus the RIO manned the F-4 for the return flight with no flight boots, no flight suit, no gloves or survival equipment, and an ill-fitting oxygen mask.

for poor judgment

The weather forecast for their destination was 100 overcast, obscuration, ¼ to ½ mile visibility in fog. Nevertheless, the pilot elected to file his flight plan. This was legal according to OPNAV since there was an alternate airfield that was forecasting better than 3000/3. However, he was in violation of his squadron's night instrument minimums of 600/2, imposed because of the squadron's limited exposure to night/IFR operations. The pilot's total actual instrument time in the past 3 months was 1 hour.

Takeoff, departure, and the 30-minute enroute flight were routine. Upon initial contact with approach control, the pilot was given weather of 200/½, enough for him to legally commence the approach.

The TACAN penetration to a PAR pickup was routine until 3 miles on final. At this point, the final controller directed the pilot to "disregard your directional gyro," and proceeded with a no-gyro approach because the pilot was not responding to his heading calls in the expected fashion. At 1½ miles, the aircraft went well above glide slope, and GCA called for a missed approach at ¾ mile, since the aircraft was too much above glidepath to execute a safe landing.

On the missed approach, the controller instructed, "Turn left 230, climb and maintain 1500 feet." For unknown reasons, the aircraft continued straight ahead until almost three-quarters of the way down the runway before starting a left turn. Neither the gear nor flaps were raised. Shortly after the turn was initiated, the tower and several field personnel observed a bright orange flash approximately 1 mile west of the field. The *Phantom* had crashed, killing both aircrewmen.

Detailed examination of the wreckage revealed no aircraft malfunctions. The aircraft impacted in a flat attitude, separating the engines from the airframe with little damage to either engine. Both engines were found to be operating normally at a midrange power setting (90-91 percent). Although both crewmembers were found outside the wreckage, the board concluded that the evidence indicated neither had attempted to eject.

Since material malfunctions were ruled out, the investigation centered around other possible explanations for the crash. A stall during the missed approach turn was discounted since neither crew attempted to eject, power was not applied above 90-91 percent, and airplane attitude at impact corresponded to a coordinated port turn. Furthermore, a witness stated that he saw the airplane under the overcast just prior to impact, and the aircraft appeared to be flying in a controlled descent similar to a normal landing. Therefore, it was concluded that the most probable cause of the accident was a controlled descent into the ground caused by a combination of vertigo, disorientation, lack of proficiency in the night instrument environment, and possibly, an attempt to fly VFR in IMC conditions. The pilot initially indicated a scan breakdown during the PAR approach. He further indicated he was "getting behind the aircraft" when he failed to comply with missed approach instructions in a timely, concise manner, and didn't raise the gear on the missed approach. Finally, there was no indication that either crewmember was aware of anything unusual, either in the cockpit or outside, such as an aircraft malfunction or an external distraction. The board did theorize that the pilot may have been attempting to fly visually. The patchy fog at this airfield often is heavier at one end of the field than the other. If the pilot had broken out at midfield, he may have been tempted to go off the gages in his turn downwind.

Whatever the exact cause of the accident, it was almost certainly pilot-related. And it appears the pilot's greatest error was poor judgment. Specifically, this pilot showed poor judgment in the following areas:

- Violating squadron weather minimums of 600/2. These minimums were established to allow for the limited night/IMC exposure this squadron's pilots experienced due to their mission. The prudence of these minimums was vividly demonstrated by this accident.
- Filing into weather beyond his capability. Given his

limited experience in model, as well as limited instrument and nighttime, his decision to attempt an approach to OPNAV minimums when there was no operational requirement was foolhardy.

- Consuming alcoholic beverages immediately before flying. Although no evidence of alcohol was found during the autopsy by the Armed Forces Institute of Pathology, even the small amount of alcohol the pilot consumed could do nothing but detract from his performance at a time when he needed all of his capacities.

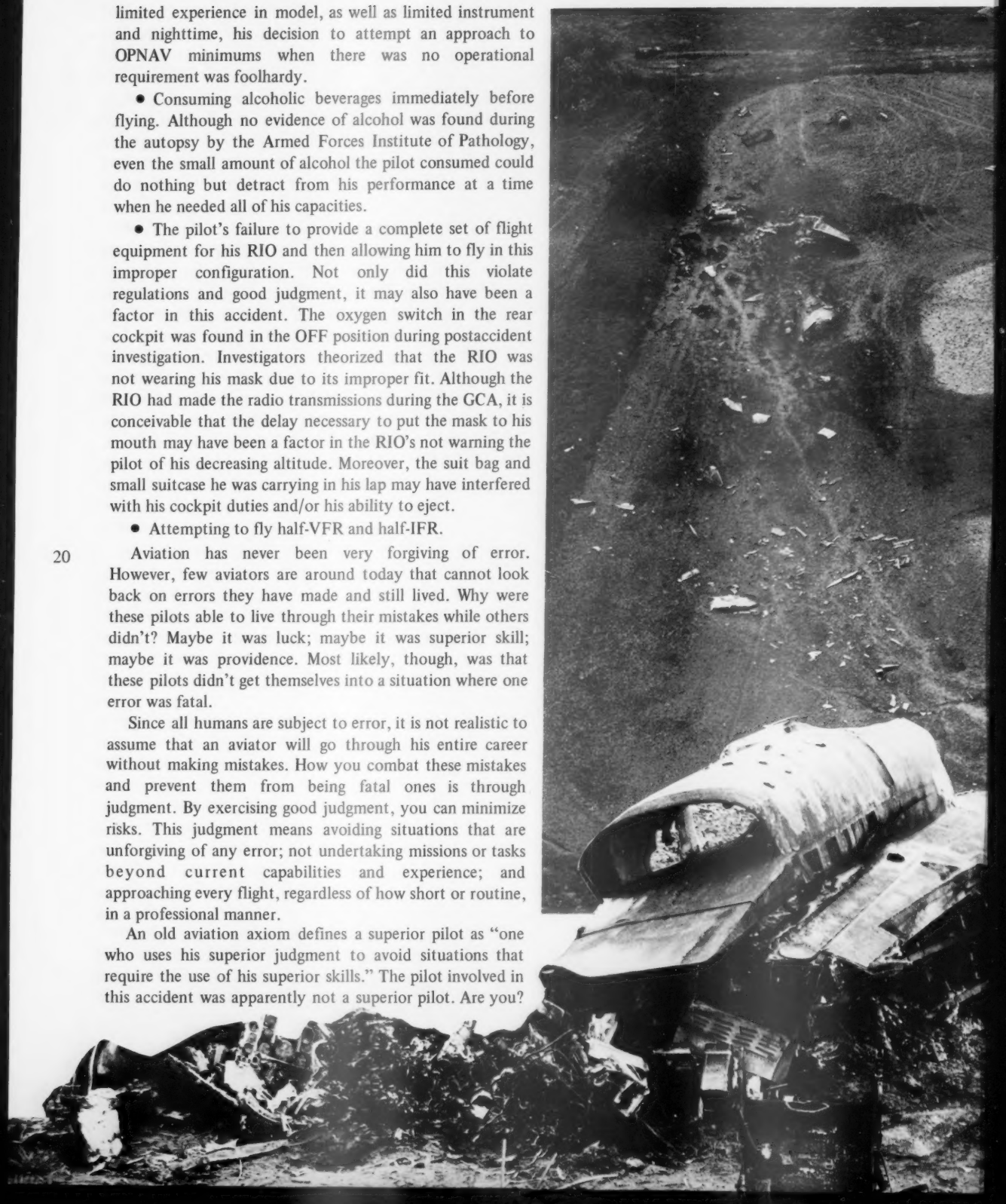
- The pilot's failure to provide a complete set of flight equipment for his RIO and then allowing him to fly in this improper configuration. Not only did this violate regulations and good judgment, it may also have been a factor in this accident. The oxygen switch in the rear cockpit was found in the OFF position during postaccident investigation. Investigators theorized that the RIO was not wearing his mask due to its improper fit. Although the RIO had made the radio transmissions during the GCA, it is conceivable that the delay necessary to put the mask to his mouth may have been a factor in the RIO's not warning the pilot of his decreasing altitude. Moreover, the suit bag and small suitcase he was carrying in his lap may have interfered with his cockpit duties and/or his ability to eject.

- Attempting to fly half-VFR and half-IFR.

Aviation has never been very forgiving of error. However, few aviators are around today that cannot look back on errors they have made and still lived. Why were these pilots able to live through their mistakes while others didn't? Maybe it was luck; maybe it was superior skill; maybe it was providence. Most likely, though, was that these pilots didn't get themselves into a situation where one error was fatal.

Since all humans are subject to error, it is not realistic to assume that an aviator will go through his entire career without making mistakes. How you combat these mistakes and prevent them from being fatal ones is through judgment. By exercising good judgment, you can minimize risks. This judgment means avoiding situations that are unforgiving of any error; not undertaking missions or tasks beyond current capabilities and experience; and approaching every flight, regardless of how short or routine, in a professional manner.

An old aviation axiom defines a superior pilot as "one who uses his superior judgment to avoid situations that require the use of his superior skills." The pilot involved in this accident was apparently not a superior pilot. Are you?



Why Exposure Garments?

By LCDR Norman J. Nuttall, RN
Life Support Equipment Branch
Naval Safety Center

THE OCT and NOV '76 issues of APPROACH contained articles on two different types of antiexposure garments. These articles discussed the relative merits of the different types of exposure garments, but they did not really address *why* these garments should be worn. Maybe the answer is obvious, but maybe it isn't. Pilots have traditionally objected to wearing antiexposure garments. Maybe if they understood the function of these suits more thoroughly, they would be more willing to wear them properly.

First of all, let's define the biggest threat that any survivor has to face in the water. Floating should be no problem with a life preserver. Despite the publicity given to "Jaws" and Moby Dick, being eaten by one of the larger sea creatures is much rarer than the imagination may lead one to believe. The real threat is hypothermia.

Hypothermia? What's that?

It's a lowering of the deep body temperature to a point where unconsciousness and eventually death result. And the water doesn't have to be that cold before hypothermia becomes a significant concern.

Whenever the water temperature is below 17°C (64°F), an unprotected human body will start to lose its deep core temperature faster than its metabolism can regenerate and replace heat loss. Predictably, the colder the water, the less time the swimmer can survive.

It's very difficult to say exactly how long someone can survive in cold water, since many factors influence the time of exposure before unconsciousness results. However, it has been clinically established that an unclothed man of average build can last 20-30 minutes in water of 5°C (37°F), and 1½ hours in water of 15°C (59°F). Dress this man in conventional clothing and the duration increases to 40-60 minutes at 5°C and 4-5 hours in water of 15°C.

Hey, that's not long, you say. You're right! And a whole lot of the earth's surface is covered by water cold enough to give you concern.

Basically, anywhere outside the tropics, the water can get cold enough to make survival largely a function of your preparedness. Tropical waters are defined as 20-25°C (68-77°F).

The human body loses the temperature so vital to life by heat radiation and conduction. Heat radiation loss is simply the heat that leaves your body through the head and other exposed areas. Heat conduction loss occurs in a little more complicated fashion.

The body has a system built into it to regulate the deep body core temperature by controlling the amount of blood it sends to surface areas where it can be cooled by wind or water. When you thrash around in the water – and you will as a survivor – the muscles that you use demand blood. This they will get; the body will see to that. Up comes the warm blood to the muscles, where it is cooled by the water and then returned to the core where it rapidly cools those organs of the body that keep us alive. Water has a cooling rate 20 times faster than air, hence the particular dangers of hypothermia in water.

The way to fight hypothermia, then, is to decrease conduction and radiation heat loss. This is where your immersion garment comes in. It helps retain the body heat by one of two ways: the dry suit method or the wet suit method.

The dry suit concept (*Ventile* material) uses a waterproof outer fabric coupled with insulating undergarments to keep as many layers of air trapped between the outer garment and the body surface as possible. The wet suit concept allows the cellular structure of the material to absorb water that is then heated by the body temperature where it remains as a barrier against further thermal degradation.

To avoid radiated heat loss, wrap yourself in as many clothes as possible. Also, use your survival hood. A great amount of radiated heat loss is literally "off the top of your head." The survival hood can cut it down.

To sum up, here is what you should do as a survivor in water:

- Swim clear only of wreckage of sinking ship or aircraft.
- Use flotation gear.
- Wear as much clothing as possible.
- Get into a liferaft and wrap the weather shield around you.
- If you do not have a liferaft, then make no attempt to swim. Adopt the fetal position, supported by your life preserver. (See "Man in Cold Water," NAVY LIFELINE January/February 1976 for added information.)
- Wear an antiexposure garment as it was designed. Modifying equipment to make it more comfortable or better looking will result only in degraded cold water protection. ◄

Anymouse

Momentary Goof

WE were on deployment at China Lake, and I was hurrying to make a scheduled launch time. We had all been briefed on the absolute necessity of being on time overhead the target. The stage was set.

I was sitting in a new environment, busily familiarizing myself with a new switchology setup for the flight. Then things began to get sticky. The annunciator panel light illuminated with a pesky fuel boost pump light. A troubleshooter was summoned and I elected to proceed with the plane captain checks. Target time was getting closer.

My plane captain gave me the dirty-up signal and I complied, just as the powerplants mech came up the ladder. My mind told me he had signaled the plane captain to step back, so he could rectify the fuel boost problem. I was asked to cycle the generator switch and as I moved my hand to do it, something inside me didn't feel right. I switched the generator off, and my heart sank as the spoilers and speed brakes cycled in.

I knew in the split millisecond it took to get the switch on that I had made a grave error in judgment. Another plane captain came running into view and exasperatedly signaled me to get my cotton-pickers out of the cockpit. My plane captain hove into view, highly teed off, rubbing his head where the spoiler had zapped him.

I was glad to see him but couldn't shake the sick feeling inside. I knew I had almost put him in the hospital – or worse – due to my carelessness and haste. I was reminded that an A-4 pilot is one who has either gotten a plane captain or will get a plane captain. I've joined the ranks now, unfortunately, but I'll never get another one.

Ihadtosayi'msorrymouse

Challenge and Reply

IT had been a long day at Det Rock. We had had to test our bird early that morning and had spent the rest of the day hauling cargo and passengers. I was flying as HAC/postmaintenance inspection pilot, and our detachment OinC, also an aircraft commander, was flying as my copilot.

During our mission we had to make many starts and shutdowns, and by midafternoon my copilot was starting to neglect the checklist. Finally we were preparing for our last start before heading for the shower and some suds. I read the checklist, assuming my copilot was checking the items. He

wasn't. Upon starting No. 1 engine, all we got was smoke. We had overlooked the ignition. Luckily, the engine wasn't too hot at that point or I suspect we would have had real problems – like a fire!

I know, I know. Checklists are made to be used, and it was my responsibility as aircraft commander to see that the challenge and reply system was used. However, I allowed myself to get sucked in when I assumed my copilot was checking each item I read. Fatigue contributed to our sloppy, uncoordinated efforts. (That is an explanation, not an excuse.)

Slipsmouse

Record Almost Down the Drain

WHILE briefing a formation refresher flight involving three aircraft, the CO announced it would be a division takeoff. All three were to roll at once. Both wingmen were replacement pilots, just recently qualified in the aircraft. A three-plane takeoff is clearly in violation of OPNAVINST 3710, and is also poor

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

REPORT AN INCIDENT
PREVENT AN ACCIDENT

headwork and a sorry example.

The accident potential was immense. In my opinion, disaster was averted only because of an in-the-chocks abort by one of them, due to a fuel gage malfunction.

This type of action by a senior officer can only lead to dire consequences. We are approaching 30,000 accident-free flight hours, and this type of Delta Sierra maneuvering is NOT what got us here. I hope this serves to remind everyone that lapses of headwork occur at all levels. We must all be vigilant and holler (tactfully) when such lapses occur. The alternative is not a pleasant thing to contemplate.

Bythebookmouse

Flight Gear Shortage

THE aircrewmembers of my squadron find themselves in a situation that appears to be quite minor on the surface, but could possibly result in an aircraft mishap. We have 30 NA/NFOs in the squadron. To equip this group, we have only a dozen sets of flight gear. This results in a constant exchange of flight gear among the crewmen of different sizes.

The exchange always occurs in the manner of a PANIC FLAIL at the very last minute before man-up. It is fairly obvious, even to the casual observer, that this could cause or be a contributing factor in an aircraft mishap. (Think of a misfit in a helmet causing pain, discomfort, or distraction at the wrong time; or an improperly fitted oxygen mask causing someone to start slipping away just when his eyes are needed most.) We have continuous problems concerning ill-fitting, lost, damaged, stolen, non-RFI, dirty, and worst of all, hazardous flight gear.

The situation can be blamed on no money, no supervision, no control, and no one knows. It could easily be remedied by more money, some supervision, more control, and by someone knowing what's going on. I remain your servant.

Handmedownmouse

A Paradox

IT seems as if we military folks are going the wrong route with regard to low frequency radio beacon reception, and I view it with alarm.

Why should we be decommissioning the low frequency radio beacons at our activities and removing ADF equipment from the cockpit?

These beacons serve as excellent sources of long range (relatively speaking) navigation for the low and slow movers. Further, they often double as ATIS, transcribed weather, and NOTAM sources. Those of us with a single UHF and often unreliable TACAN have relied on the ADF many times for saves.

The FAA maintains a network of weather broadcasting radio beacons, as well as a wealth of ADF beacons for enroute navigation and approaches. They are valuable, and I hope we'll continue purchasing aircraft with low frequency receivers.

ADFmouse

"Let Me See the Doc!"

An A-4 pilot injured his shoulder while surfing. A lump developed on his shoulder, he experienced double vision, and became dizzy. Upon reporting to the emergency room at the dispensary (it was a Saturday morning), he was told to have a seat and wait his turn. He wasn't given any treatment for possible shock.

Keep in mind this injury could have been a broken or dislocated shoulder. An E-6 corpsman eventually checked him by requesting certain coordinated movements. The pilot experienced no resulting pain, and most of the swelling had gone by then. He was told there was no problem.

His buddy, a graduate of ASO school, reminded the corpsman that the injured man was a single-seat jet pilot and was scheduled to fly that very evening. The corpsman was not impressed at all. A doctor was observed on duty, there were sufficient corpsmen on duty, and there was an X-ray machine in the next room. No further examination of the injured man was made. What a way to run a dispensary!

Name Withheld

The main problem at your dispensary, and everywhere else, is a deficiency in out-patient care – aircrews and others. However, the pilot gave up too soon. He should have firmly insisted on being examined by the doctor. Since you didn't say whether he flew that day or not, let's hope he reported to Ops that he wasn't in any shape to wrestle an A-4.

DILBERT'S BIG BROTHER

By LT Douglas A. Yesensky
ASO, HT-18

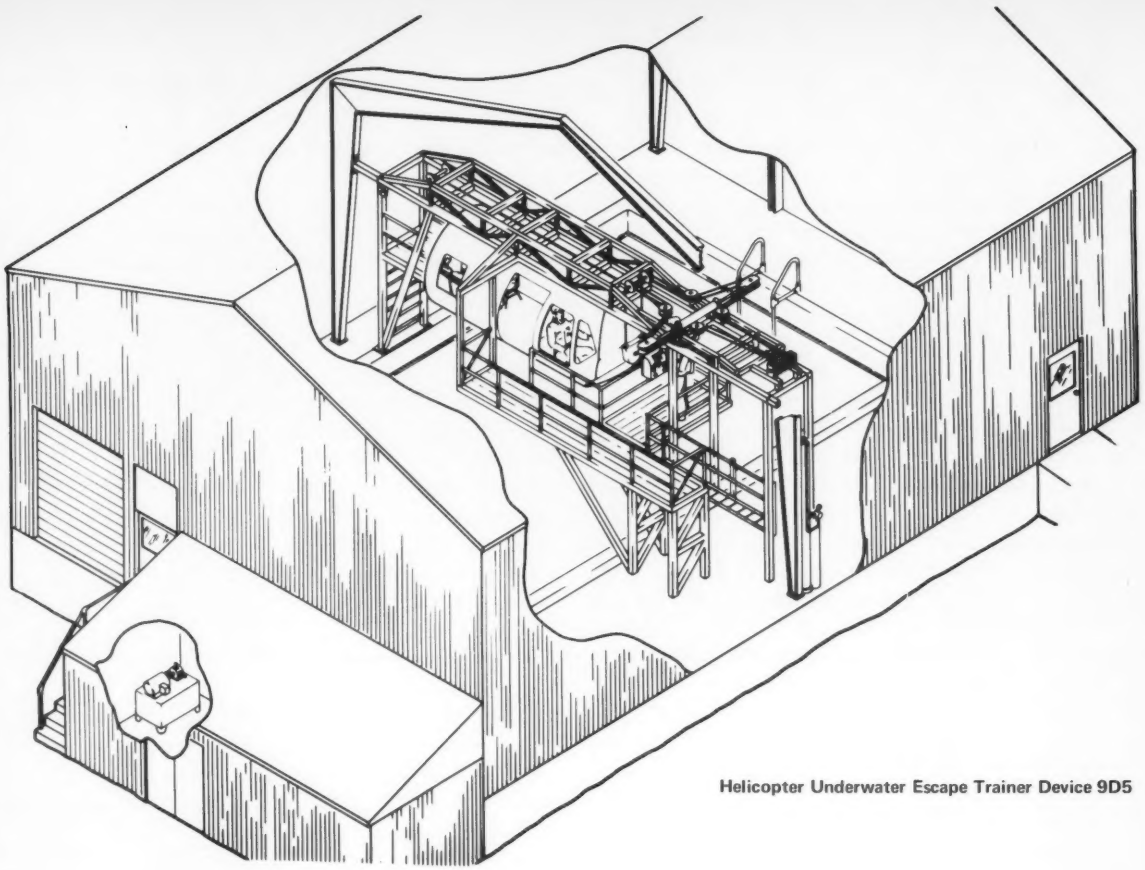
YOU climb aboard for another free ride back to USS BOAT. After the H-3 becomes safely airborne, you settle back and relax. Five passengers are along for the ride, and as you look around the compartment, you notice an aircrewman securing the cargo. Everything looks fine. Gazing through the open entrance door, you wonder how it can get so dark so quickly. There's not even a moon tonight. Suddenly, the aircraft shudders, yaws violently to the right, and starts a rapid descent. The crewman warns you of an impending crash.

During the descent, your mind moves so fast you hardly realize what you're thinking: "How do I get out of this thing? What did that crewman say? Why didn't I pay attention to that brief? How did those emergency escape mechanisms work?"

The crash is not as violent as expected, but the aircraft rolls immediately and begins to sink. You quickly release your lapbelt only to be swept aft by inrushing water as the passenger compartment is flooded. You become totally disoriented. Using the bulkhead for reference, you work your way through numerous entanglements and over several obstacles, finally discovering a window. After fumbling with the jettison handle for what seems like hours, something pops, the window is clear, and you pull yourself through. The swim to the surface seems simple, and you fill your lungs with fresh air once more. Four others have made it. Simple arithmetic quickly shows you that five have not. Why? The ditching itself was not violent enough to hurt anyone. You wait, but no one appears. Why? Maybe they didn't discover a window. Maybe they did, but couldn't work the release mechanism. After 5 more minutes, you realize that there will be no more survivors.

The preceding story is hypothetical but could well occur during normal helicopter operations on any given day. Presently there is a lack of adequate or realistic egress training for helicopter aircrews and passengers. The Dilbert Dunker provides neither the realistic sinking characteristics nor cockpit/cabin design similar to any Navy/Marine helicopter. Over the past few years, there have been aircraft design proposals which could increase the survival rate during a crash. Crashworthy cockpit seats, extraction/ejection mechanisms, and saltwater-activated perimeter lighting, outlining escape routes, are but a few. However, the need for a realistic underwater escape trainer still exists. The Universal Helicopter Underwater Escape Trainer (Device 9D5) will fulfill this need.

Statistics from NAVSAFECEN show that from July 1963 to February 1975, 234 helicopters with a total of 1093 occupants either crashed or were ditched at sea; 196 victims died (130 were listed as lost/unknown, 29 suffered fatal injuries or injuries which caused drowning, 37 uninjured were drowned), and of the remaining 897, 437 egressed underwater. The success rate for aviators trained for underwater egress was 91.5 percent. The success rate for those who had not been trained was only 66 percent. Major problems encountered by survivors were: inrushing water, disorientation, panic, confusion, entanglement with debris, and unfamiliarity with exit release mechanisms. Difficulty in operating release



Helicopter Underwater Escape Trainer Device 9D5

mechanisms on emergency exits has frequently been encountered during actual underwater egress. Among the most widely deployed Navy helicopters (H-2, H-3, H-46), there are 15 different types of external rescue handles. How many personnel who ride in helicopters every day have operated any of them? The low survivability rate highlights the need for an underwater egress trainer designed not only for aviators, but for all who may travel in a helicopter.

Further statistical backing of the necessity for an underwater egress trainer can be found in the Royal Navy, which has utilized such a device since 1962. Since the trainer's inception, drowning fatalities during ditching incidents have been reduced to near zero. The training is mandatory for all aircrews and is repeated at 2-year intervals. Aircrews ride the trainer from different seat positions, thoroughly gaining confidence in their ability to successfully egress from anywhere in the helicopter. Their training reflects the belief that successful egress from a ditched/sinking helicopter depends largely on a spontaneous action achieved through repetitive drills. The results tend to prove their hypothesis.

The Universal Helicopter Underwater Escape Trainer will not be a mockup of any specific helicopter. Externally, it resembles a large van 15 feet long, 7 feet high, and 7 feet wide. It has a fiberglass fuselage and cockpit area, and can hold a total of six trainees (training sessions, however, will be limited to four). Six escape exits are provided. The cockpit area will contain a cyclic stick, instrument panel, a center console, and a collective stick in the full up position. The layout of obstructions inside the fuselage adds realism to the trainer.

The entire trainer will be suspended from 3 to 6 feet above the pool. Rate of descent to water impact is operator controlled and can range from 0 to 10 feet per second, followed by a sink rate of up to 1 foot per second. After impact, the trainer is capable of rolling 180 degrees in either direction. Degree and direction of roll is also operator controlled. Egress can be practiced with the trainer floating upright, inverted underwater, or any position in between. The uncertainty of exactly what will occur after water impact will add realism and thus substantially enhance the value of the training.

The release latches of the exits will not be peculiar to those of any current helicopter. Rather, they will be capable of operating in three directions: pull out, turn up,

turn down. Methods of operation can be preset by the operator so that the latches will function in one of the three ways. A slide bar over each exit will simulate the act of clearing a passage. (Solid doors and windows will not be used.) The release mechanism and slide bar are not intended to prevent the trainee from escaping.

Three distinct actions will be required of the trainee after water impact:

- Release seatbelt.
- Operate release mechanism properly.
- Clear exit (operate slide bar).

The Universal Helicopter Underwater Escape Trainer will augment present water survival training. Eventually, all aviation personnel, regardless of the type of aircraft they fly, will be required to receive the Device 9D5 training. In addition, personnel who may have frequent occasion to ride in helicopters will receive this training as well. Currently, NAS Pensacola is the only naval installation at which the Device 9D5 will be installed. However, if training is as successful as anticipated, others will be appropriated for major shore facilities. This would allow for both initial and requalification training for all personnel.

Navy helicopter aircrews operate from virtually all types of ships and are tasked with round-the-clock SAR, ASW support, night MedEvacs, and passenger flights. This extended overwater activity potentially subjects aircraft and passengers to overwater emergencies and subsequent ditching. Overwater immediate action emergencies necessitate ditching for helicopter aircrews, while the fixed-wing community experiencing similar circumstances has the advantage of ejection/bailout.

Deaths attributed to drownings should decrease significantly with the advent of training in the Dilbert's Big Brother. The need for realism in underwater emergency egress training is evident. The Universal Helicopter Underwater Escape Trainer will provide realism and most certainly will save lives. ◄

INTO THE TOOLIES

IT was an afternoon when the birds weren't all grounded, but close to it. A pilot strapped into his TA-4 to launch from a midcontinent air station for the warmth of the sunny south. Departure weather was 1200 scattered, 2500 broken, 6000 overcast, visibility 2 variable 2½, rain and fog.

The pilot was given the wind as 120 degrees at 8, duty Runway 3. He taxied out, aligned his *Skyhawk* on the centerline, shifted to Departure frequency, and started his takeoff roll.

After about 400 feet of roll, the aircraft began to float, fishtail, and weathercock, nose to starboard. The aircraft continued curving to the right. About 750 feet, the pilot closed the throttle and began to abort. The drifting skid continued, but the pilot dropped the hook and caught the 1500-foot wire – just 20 feet from the right side of the runway.

The aircraft left the concrete about 75 feet past the wire. Its tracks indicated that the *Skyhawk* was skidding with the nose 25 degrees right of the runway heading. After traveling 100 feet in the boonies, the TA-4 started to parallel the runway for another 300 feet and finally stopped 55 feet abeam the runway.

The pilot had broadcast his decision to abort, but Departure didn't hear him and the tower was not monitoring the frequency. When the aircraft stopped, he shifted to tower frequency and requested assistance. The TA-4 was towed to the line and given a thorough inspection; no damage was found.

The pilot was a victim of incomplete information. The tower had been recording winds from 120 degrees at 12 knots with gusts to 20 knots. A readout of meteorology's minute-by-minute recorder indicated a gust to 22 knots during the time the pilot was on his takeoff roll.

In this instance, it seems that the tower must take the lion's share of the responsibility. The tower didn't advise the pilot of the gusty winds or offer another runway. There was a runway available directly into the wind. On the other hand, the pilot didn't really help himself out. It would seem that he had an opportunity to determine the gusty nature of the winds through the DD 175-1 weather brief, the ATIS, or windsocks located about the field. He also had the option of requesting the runway directly into the wind.

Most A-4 pilots are thoroughly cognizant of the dangers of crosswinds on landing. However, it is also important that they remain cautious of crosswinds on takeoffs. Many A-4 pilots have had wild rides on crosswind takeoffs. Some have lucked out, some haven't! ◄

MedEvac Problem

THE rescue hoist cable broke. The litter, with a patient strapped in, fell 10 feet to the flight deck. After he was examined, it was determined the evacuation should be continued right away, and the second attempt to get the patient into the helicopter was successful.

The crew of a CH-46D had been assigned an emergency medical evacuation. The patient, aboard ship, was suffering from internal bleeding and needed hospitalization. Enroute to the ship, the helo crew rigged the rescue hoist. When overhead the ship, they advised they were equipped with a horse collar and a litter. The corpsman on the ship requested the litter.

When the litter was first lowered, it was evident that no one on the ship knew how to use it. A helo crewman was lowered to the flight deck to ensure the patient was strapped in properly and the litter was hooked up correctly to the hoist cable. There is a requirement for the deck crew to be trained in the use and operation of the litter.

Once the hookup was completed, the hoist operator raised the litter using the rescue hatch in the cabin deck. As the litter reached the rescue hatch, the hoist operator tried to pull it into the aircraft, but he was working alone and was unable to do the job. He attempted to hoist the patient to get a better grip on the litter. When he activated the UP switch, the cable snapped and the patient fell back to the flight deck.

The hoist operator reported to the pilot what had happened; the HAC broke hover and entered the Delta pattern while the ship's corpsman examined the patient. The HAC then entered a 5-foot hover over the edge of the flight deck, and both the crewman and the patient entered the helo via the starboard entrance door.

The ship had a helo platform, but the deck was not stressed to handle a CH-46; so a hover was necessary. The patient was then flown to a hospital. It was determined that from the free fall, the patient suffered a laceration of the forehead and a fracture of both heels. There's a possibility the patient may suffer some degree of permanent disability from the fall.

The hoist cable parted because of the crew's failure to connect the hoist block assembly cannon plug. When connected, the cannon plug will arm the limit switch, which stops the rescue hook just below the cable cutter. Without the limit switch in operation, the cable may be reeled in beyond the stop and exceed the cable's tensile strength.

In his endorsement, the CO commented that the present hoist block assembly with cable cutter and limit switch incorporated extends 4 feet below the hookup point on the cabin overhead, or 2 feet above the cabin deck. Depending on the strap length and/or hookup point on the load, the load itself can frequently only be brought up to within a foot or two of the cabin deck. This means the load has to be lifted manually into the cabin. This is possible as long as both crewmen remain in the aircraft. He suggested reducing the 4-foot length from the cabin overhead to the hook to alleviate this problem.

It is very important that helicopter crewmen be checked out, trained, and qualified in live hoists. It is also paramount that all safety features are installed and used at all times. ◄

Our Readers Respond

Re "The *Ventile* Antiexposure Suit"

THE subject of antiexposure protective garments is apparently close to the hearts of the naval aircrews that must wear them. Response to the OCT '76 article on the Ventile antiexposure suit has evoked much response from the Fleet. Feedback so far has been overwhelmingly in favor of the Ventile garment as opposed to the CWU-33/P, as displayed in the following letters. However, whatever garment is worn, it is imperative that aircrews wear some type of protection during the cold weather months. See the article "Why Exposure Garments?" on pg. 21 of this issue to understand why wearing antiexposure protection is literally a matter of life and death.

FPO, New York – Where would we in naval aviation be without our British friends? They have given or contributed to the concept of the angle deck, the mirror landing system, and steam catapults, to name a few, and now the *Ventile* poopy suit. I recommend that we take our "experts" from Warminster, put them in that "better" CWU-33/P suit for 3 or 4 hours (not counting brief and preparation time), and see how they feel.

Not only is their word hurting us physically, but financially as well. Those "better" wet suits cost a bundle (when you can get them), and every operational aircrewmember knows that the comfort and mobility are nil.

CDR H. R. Dombrowski
CO, VAW-125

FPO, New York – It was a pleasure to read the article entitled "The *Ventile* Antiexposure Suit: It's Great!" in the OCT '76 APPROACH. Lieutenant Commander Smith and LT Brich have brought before the aviation public the solution to a problem that has existed since man first flew over water in cold climates.

The fact that the CWU-33/P integrated wet suit is unsatisfactory during high-G maneuvers is a problem which deserves immediate corrective action. We want to emphasize that the CWU-33/P is also unsatisfactory for E-2 crews. Our schedule usually follows the customary CV VAW operations of double cycle with approximately 3.6 to 4.0 hours flight time. With brief/debrief and preflight time, 6 hours in the integrated wet suit is not unusual. At least 2 hours are spent without benefit of ventilation. Other problems related to ventilation follow:

- An aircrewman must disconnect his ventilation hose when performing airborne troubleshooting.
- The readyroom blower motor is so loud that routine functions cannot take place. Flightcrews, including those standing alert duty, have elected literally to sweat out the period rather than listen to the blower motor squeal.
- No provisions have been made for ventilation while operating ashore.
- Indications are that the incidents of grounding chits increase as squadrons enter poopy suit conditions. Lack of ventilation, profuse sweating, and rapid cooling provide an almost unbeatable combination for contracting the common cold.

Another factor concerning the CWU-33/P is fatigue. Cases have been documented concerning pilots receiving medical treatment for fatigue caused by wearing the integrated wet suit during carrier qualifications.

Egress from the E-2 is unique. Since the aircraft does not have an ejection seat, we must manually muscle our way out of the seat and down a narrow passageway. To say that bailout would be difficult is an understatement. And climbing out an overhead hatch wearing the CWU-33 is virtually impossible. We have listened to proponents of the water survival benefits of the integrated wet suit, but the first step in water survival is to get free of the aircraft and into the water.

In an operational environment, the *Ventile* suit has been worn by Fighter Squadrons FOURTEEN and THIRTY-TWO and other members of CVW-1. The suit has received universal praise, although the discrepancies cited in the VX-4 evaluation report – specifically, breakdown of neck and wrist seals – have been a problem.

Those of us who have battled with the CWU-33 in the readyroom, on ladders, during preflight, or in the aircraft have realized its inadequacies for years, and apparently so have the Air Force and British. They have done something about the problem. Why don't we?

LCDR J. F. Wagner
Safety Officer, VAW-125

USS TRUETT (FF 1095) – Your article on the *Ventile* antiexposure suit was read with great interest. For the last 2 years, our squadron has hosted a Royal Navy *Sea King* squadron during HMS ARK ROYAL's spring visit to Norfolk. We had the opportunity to watch their pilots wear the *Ventile* suits a good portion of the day, relaxing after their flights without a complaint relating to discomfort.

We are currently attached to a NATO Force in Northern Europe (antiexposure suit weather all year) consisting of Dutch, Canadian, British, and American destroyer-based helos. We recently offloaded to RNAS Portland, U.K. for 3 weeks of training and were afforded the opportunity to see the Royal Navy survival equipment firsthand. We watched RN flightcrews floating in the cold English Channel during their water survival training and even had a chance to try out some of the equipment ourselves. Everything

mentioned in the article we found to be true.

Based on our experience, we heartily endorse the attempts to obtain the *Ventile* antiexposure suit. Also, think of the maintenance, weight, and money saved by no longer requiring wet suit blowers.

LT R. Jaeger
OinC, HSL-34 Det 1

FPO, New York – I applaud the efforts of authors Smith and Brich in the OCT '76 APPROACH to acquire a more viable antiexposure suit for naval use. However, there are several issues raised in the article that require further research. For example, Fig. 1 of the article shows a dramatic downturn in survivability should the proposed suit leak. As I recall, this was one reason for replacing older suits with the VWS. The proposed new suit may be extremely vulnerable to rupture upon ejection, particularly from the A-6, since the seat is fired through the canopy. Furthermore, the suit is not tamperproof. It is vulnerable to nonapproved modifications for wearer comfort, such as slits in the rubber seals around the cuffs and neck which render the suit ineffective.

I do take strong exception to the purchase of any suit for Fleetwide use based upon the requirements of a peacetime east coast ACMR. Nearly all plans require east coast carrier forces to chop to NATO in wartime, and nearly all wartime scenarios, if fought in winter months, would subject the flightcrew to the rigors of the North Atlantic, the Norwegian and North Seas. I would suggest also that the P-3 community takes exception to the statement which implies that the U.S. naval forces do not operate often in the North Atlantic.

If our primary need is for a garment that can be used off the east coast of the U.S., as the authors state, then perhaps more than one type of antiexposure suit is required to meet the needs of the Navy. Certainly this option ought not to be discontinued.

LCDR K. W. Van Lue
Staff, COMSECONDFLT

• The susceptibility of the *Ventile* suit to tearing is a point of contention. Both the Royal Navy and USAF have used the *Ventile* garment for many years, and it has apparently performed satisfactorily for them. Moreover, VF-43 had no problems along these lines. However, AIRLANT squadrons currently equipped with the *Ventile* suits have experienced widespread tearing of the wrist and neck seals. There is a fix that provides stronger material for the wrist and neck seals, and thus far this has worked well.

The A-6 may present a unique hazard due to its ejection system, but the whole Fleet should not be penalized for one aircraft's characteristics. A-6 squadrons could remain with the CWU-33/P if they felt *Ventile* integrity would be degraded during an ejection.

No flight equipment has ever been invented that is completely tamperproof. The way to prevent unauthorized modifications to flight gear is to educate pilots and enforce regulations via command attention.

While the *Ventile* movement was started primarily with east coast ACMR operations in mind, this in no way means that the garment is unsuitable for other regimes. In fact, referring to Fig. 1 of the article, the *Ventile* suit offers better protection than the CWU-33. Moreover, if operations in extreme cold weather areas are anticipated, additional underlayers can be added to the *Ventile* garment, increasing protection even further.

In reality, we can expect to operate for a considerable time with more than one type of antiexposure garment. AIRLANT has procured some *Ventile* garments for its TACAIR squadrons, but the CWU-33 will be the main antiexposure garment for the rest of the Fleet for some time to come. ◄

Letters

Request Info

San Antonio, TX – I have just purchased the remains of four ex-Navy aircraft and am curious about their past service histories. I hope that former pilots who have flown these aircraft will drop me a line about where the aircraft were based. These aircraft are SNJ-4 BUNOs 27694 and 51643, and SNJ-5 BUNOs 90847 and 91049. Any comments from your readers will be appreciated.

R. A. Houx
606 Patricia St.
San Antonio, TX 78216

To the Left

CGAS Cape Cod – I read your article "Like a Pro" in the SEP '76 issue of APPROACH and have encountered a minor point of confusion. Most helicopter pilots I know believe that an engine failure is associated with a yaw to the left, not the right. Can you confirm this?

LT Thomas J. Burnaw

• You're right! Engine failure is usually associated with a left yaw, and tail rotor failure is associated with a right yaw.

ASO Leadership/Management Styles

NAS Norfolk – I am sure all of us have seen the various styles of safety leadership applied and the effects they have had on an outfit's morale, and in the same vein, its safety posture. We have seen outfits with theory "X" managers accomplish the seemingly impossible and maintain a great safety record (for a time), and we have seen theory "Y" managers whose outfits do equally as well. (I use "X" and "Y," but we could use "P" man, "N" man, "U" man, or a number of other equally ambitious terms which seek to categorize all leaders/managers into a group.) But why? Sure, it's great to be able to classify and have everything neat and orderly. But would everyone be happy and our jobs be made any easier?

I answer "no," not by sticking to one style, because a one-style approach eventually leads to trouble. I envision a safety officer as a man of a thousand faces, capable of switching roles in an instant, depending on the situation and the personnel with whom he is dealing – a Simon Legree one time and a Mr. Clean the next. At first, it sounds like this might cause a bit of a credibility problem, but if you are the leader who knows his men and varies only in style and not in safety policy, no credibility gap will develop. The key to being an effective safety manager is *flexibility in your style and unwavering staunchness in your principles.*

LT M. G. Thomas
ASO HSL-32

Unnecessarily Close

FPO, New York – My truck broke down 40 feet off the circle that the helicopters prefer to land in. The truck was a 5000-gallon JP-5 refueler. I raised the cab and had a mechanic from PWD work on it. The pilot must have seen the truck broken down and work being done. Nevertheless, he made his approach between the refueler and the circle and landed. I was concerned that the helo might have gone out of control and the blades might have zapped us. His rotor wash blast was bad enough.

I told the mech that the pilot not only was negligent, but also stupid. There were no less than five other spots on the line that he could have used. There was also a completely empty line behind us, except for one C-141.

I hope someone will speak to that pilot and remind him how dangerously he acted. I was very concerned for my life, as well as my buddy's.

B. H. Poss
Refueler driver

• You're right, that was dangerous! To get rapid action on a situation like this, your best course is to fill out an Ops Hazard Report and give it to the operations officer. He can then take appropriate action.

Re "I Got It! You Take It!" and "George Does It Again!"

FPO, San Francisco – Two things in the NOV '76 issue of APPROACH prompted me to write.

First, "I Got It! You Take It!" (pg. 28). I was wondering when I'd see one of these horror stories in print again. As a P-3 pilot, off and on over the last 11 years I've seen all flavors of this episode happen. As part of my personal policy, I now require all pilots with whom I fly to exercise control of the aircraft IAW OPNAVINST 3710.7H, para 608. Remember, pilots, to make a positive transfer of control of the aircraft before you slide that seat back, whether it's to go aft for a cup of hot coffee or a five-course meal.

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

If you are "only" the copilot, ensure the pilot knows he has the radios *in addition to control of the aircraft!* (For those of you who have run diligently down to the flight officer for his copy of 3710, you will please note that the above reference contains the word "shall," i.e., mandatory.)

Second, "George Does It Again!" (inside back cover). Here's another one I knew would make someone's day/night. I'm not sure whether the squadron was flying "Bs" or "Cs" (PB2ON or ASW 31 AFCS) during this incident, but it highlights a dangerous habit pattern that is developing among those who fly the ASW 31 AFCS.

Starting with my refresher training in the RAG, I've noticed that whenever the "red glare shield warning light" illuminates, the first response of most pilots is to look down at the AFCS control panel – not to *fly the aircraft.* I believe this habit pattern has been fostered by the writeup in the P-3C NATOPS on pg. 1-111 under "Autopilot/RAWS flashing red warning lights – Action: Refer to status lights. May be extinguished by pushing (second detent) disengage buttons on control wheel, by pushing the WARN/TEST indicator light switch, or by operation of the autopilot emergency manual disconnect handle." Notice the NATOPS *assumes* that you'll fly the aircraft. I feel this assumption is going to cost someone dearly. I think it's about time we take a close look at some of the "Ps" in NATOPS and learn to *"operate the system safely, not how the system operates safely."*

LCDR W. D. McClellan
ASO VP-48

Re "A Cheap 'Gotcha!' "

FPO, New York – I am sure several people will write to you concerning a subject which appeared in the Air Breaks of the NOV '76 issue of APPROACH, but to ensure the word gets out, I will, too. One reason why there are no reported "emergency brakes set" landings in the P-3 is our checklist. Although it doesn't call for checking the emergency brakes per se, it does call for checking brakes and brake pressure prior to landing. It seems to me that a brake check would be valuable on every landing checklist and certainly cheaper than tires or aircraft.

CDR J. E. McNulla
Commanding Officer, VP-56

He "Nose" His Aircraft

FPO, New York – Your cover credits for the NOV '76 issue list the *Hawkeye* shown

as an E-2A. This is incorrect; it is an E-2C. The main difference is the nose. On an E-2C, the nose is much more pointed than on the E-2A. Also, the VC scoop is larger. The E-2C also has a black rim around the rotodome. Watch your aircraft!

AZ3 Douglas Lewis
VAW-117

• As you and several other "Hawkeyed" readers have pointed out, our cover credit was in error. Our apologies.

Re "Something New for the LAMPS Program"

NAS North Island – While reading the article "Something New for the LAMPS Program" in the NOV '76 issue of APPROACH, I noticed an error. As an instructor at the HSL-31 Helicopter Operations Indoctrination School, I naturally focused my interest on that article, since it directly relates to our school. The article was very informative. When referring to the picture on pg. 11, I noticed it depicted the LSE using red and green wands. This is in contradiction to NWP-42b "Shipboard Helicopter Operating Procedures," which states: "At night the LSE shall be provided with amber wands."

It is noted that according to the CV NATOPS, red and green wands are authorized, but on aviation facility ships, only amber wands are used by the LSE.

I enjoyed reading your otherwise well-written article.

AMS1 Timothy G. Smith
HSL-31 Helo Ops Indoc School

• Thanks for the correction and your kind remarks.

Minimum Crew

Treasure Island, CA – The WEEKLY SUMMARY No. 44-76 (24-30 Oct 76) reports an A-6A accident while the pilot was performing a functional checkflight. The injuries noted were 1 fatal and 1 major. Perhaps I don't have the entire picture, but it would seem prudent to conduct such checkflights with only the pilot onboard. This would reduce the risk of an NFO in the type of accident which occurred. The NFO's equipment could be checked on a subsequent flight, after the airworthiness of the aircraft had been verified.

LCDR J. J. Bloedorn
NAVTECHTRACEN

• The A-6 NATOPS prohibits single-seat flying and goes one step further in specifying that a qualified observer must be aboard for any flight.

Score One for the Drone

Long Island, NY – Lieutenant Ross Burgess' article on Missilex safety ("Missilex: Flailex or Safex?", JUL '76 APPROACH) closed with a warning not to follow a missile into the drone's wreckage lest you become "the first Navy fighter to be bagged by a drone." Well, that dubious distinction was won some time ago. A little research on my part revealed that in 1971 an F-4B contacted debris from an exploded MQM-74, and following explosions and erratic control response, the crew ejected. The accident was summarized in the December 1971 F-4/RF-4 Cockpit CROSSFEED. It's probably safe to say, however, that fighter pilots are still considerably ahead of the drones in the kill record.

Ray Woollam
Systems Safety Dept.
Republic Aviation

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approach

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CREDITS/COVER: The USS FORRESTAL (CV 59) steams in the Ionian Sea. Photograph by PH2 Kiser. **Pg. 2** photos: Richard P. Shipman.

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from the Commander, Naval Safety Center

BACK in the days before most of today's operational crews were flying, I was a squadron safety officer. That was 1962, and the all-Navy/Marine major aircraft accident rate was 1.55 per 10,000 hours. We totaled 329 aircraft and lost 264 people that year. Things were a bit looser then, and a lot of us did some dumb things.

Some lucked out and sought to pass their lessons on to others. One even became CNO's safety officer.

Now the years have passed and the accident rate has been cut to a third of what it was then. One conclusion is that those who went before got the message across; that today's aircrews have learned not to do dumb things. Sorry to say, that's not the case. Pilot error (including a fair share of NFO error) continues to lead the pack of accident causes. It's all very sad.

During the last 3 months of 1976 we had seven major accidents attributed primarily to aircrew. Particularly bad are the accidents stemming from breakdowns in flight discipline. Consider:

A small transport aircraft stalled and crashed after executing a "hot" break. Alfa damage, six fatalities.

A jet pilot departed a cross-country base on a VFR flight plan (contrary to CNO policy) and then stalled the aircraft during a steep turn reversal to avoid entry into a restricted area. Alfa damage, two fatalities.

Another aircraft attempted to halt an excessive closure rate on a rendezvous after takeoff by doing a barrel roll over the lead. The aircraft ended up 30-40 degrees nose low and impacted the ground. Alfa damage, two fatalities.

The loss of any aircraft is tragic and expensive. The loss of any aircraft due to a violation of flight regulations is ridiculous and completely preventable. If we are going to continue to have enough aircraft to maintain the readiness our nation expects us to have, we've got to quit breaking the rules. In order to stop that, we need the help of every aircrewman, controller, and supervisor. The Navy needs your assistance through maintenance of good flight discipline and prudent judgment. That's the kind of flying displayed by the majority of naval aviators. The small percentage of those whose violations of flight discipline pose a threat to themselves and those dependent on tnem must be made to see the errors of their ways. Peer pressure is best, but where that's not enough, be sure that Safety, Ops, or the CO knows.

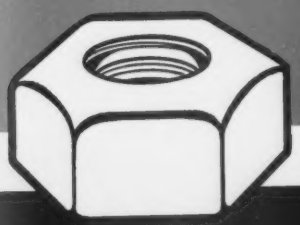
Beyond that, let the Safety Center have your ideas as to what can be done. Toward this goal, I would like to use APPROACH as a safety forum. Flight discipline is one subject. There are countless more. The squadron readyroom has long been a fertile ground for exchanging safety information. I want to extend this type of constructive safety interchange to the pages of APPROACH. Don't be afraid of controversy. As long as you have a legitimate, responsible idea that affects safety, we're interested. Your name will be withheld if you prefer.

Education, supervision, discipline, and professionalism are all key factors in safe flying and the ultimate in readiness. I can help with education through APPROACH. You can help, too . . . if you will.

RF Dunn

RADM R. F. Dunn, USN
Commander, Naval Safety Center

THIS PLANE
WAS BROUGHT DOWN
BY A NUT!



FOD KILLS